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An Introductory Tour of ArcGIS Pro

https://uoft.me/pro

Presented By:
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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

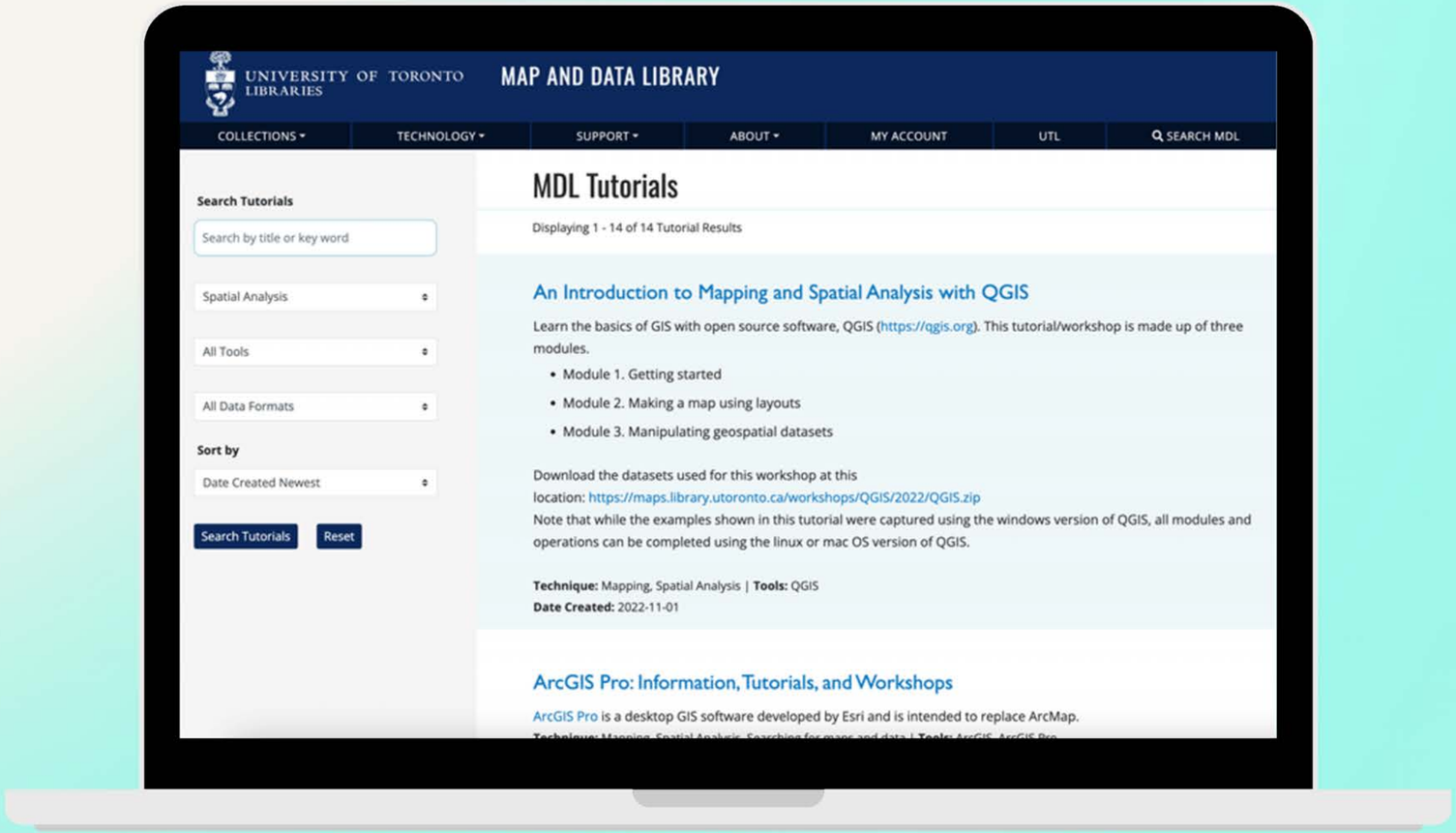
- Access data collections
- Workshops and training
- One-on-one consults
- Appointment-only until summer 2025

https://mdl.library.utoronto.ca/
mdl@library.utoronto.ca
416-978-5589
11am - 5pm, Monday - Friday

Map and Data Library

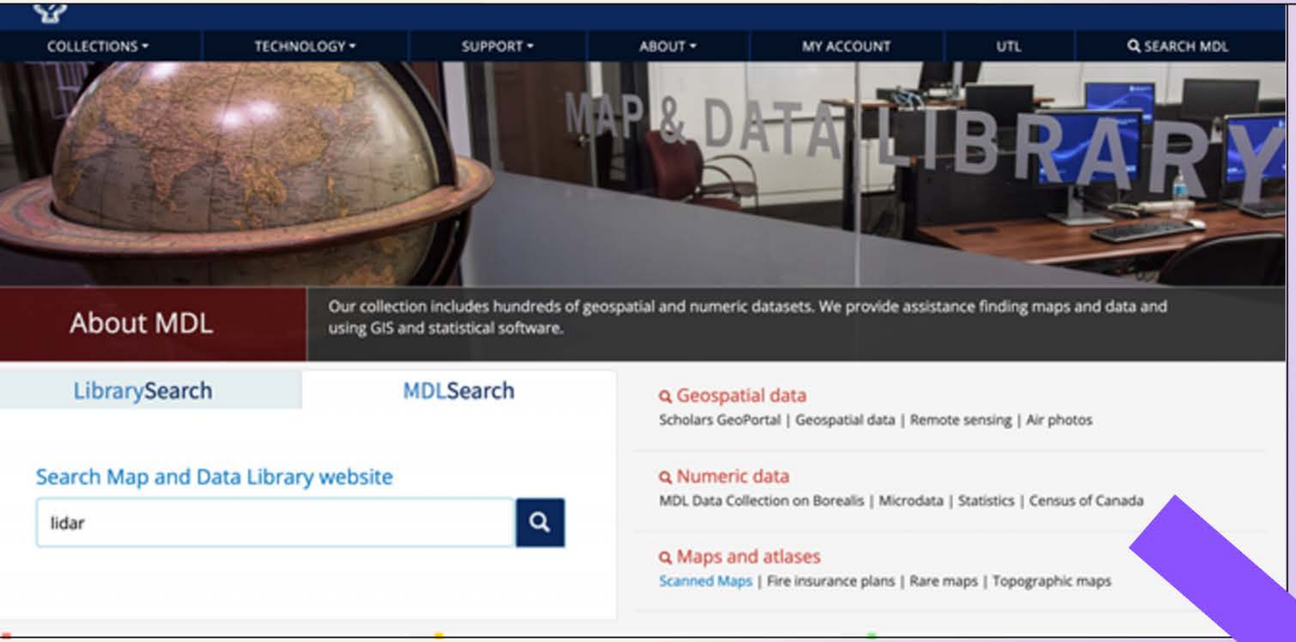
Tutorials and Workshops

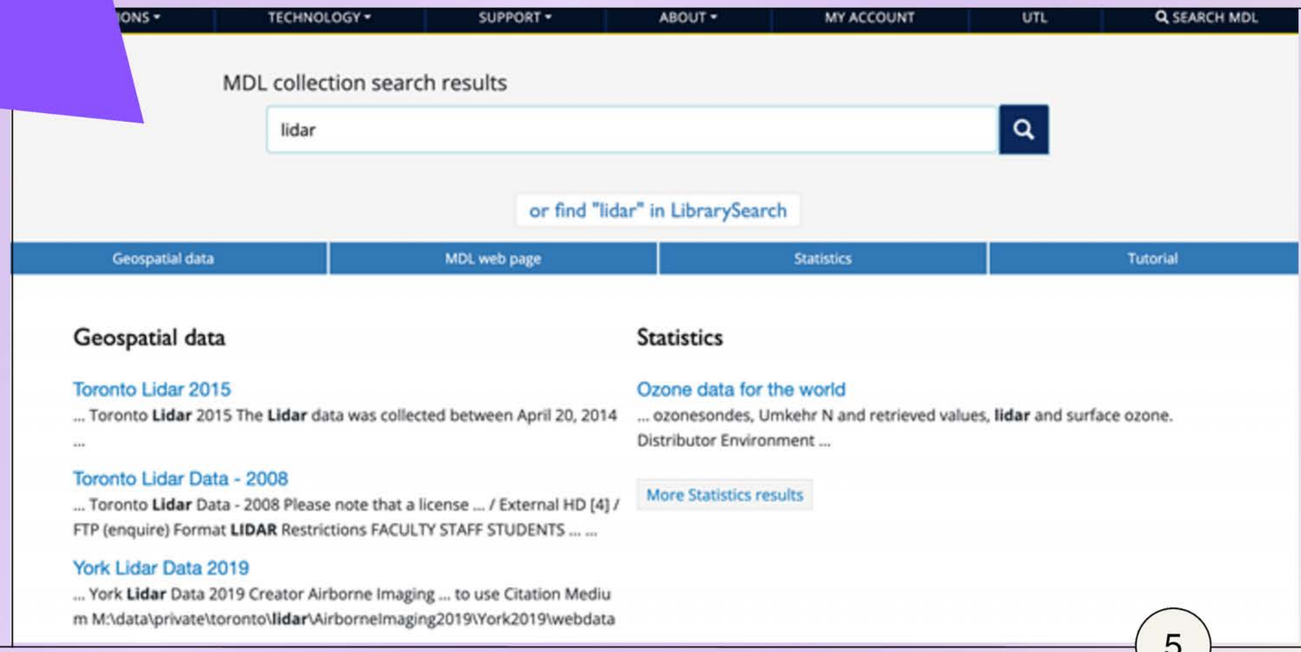
https://mdl.library.utoronto.ca/support/tutorials
https://mdl.library.utoronto.ca/support/workshops-and-training



Map and Data Library

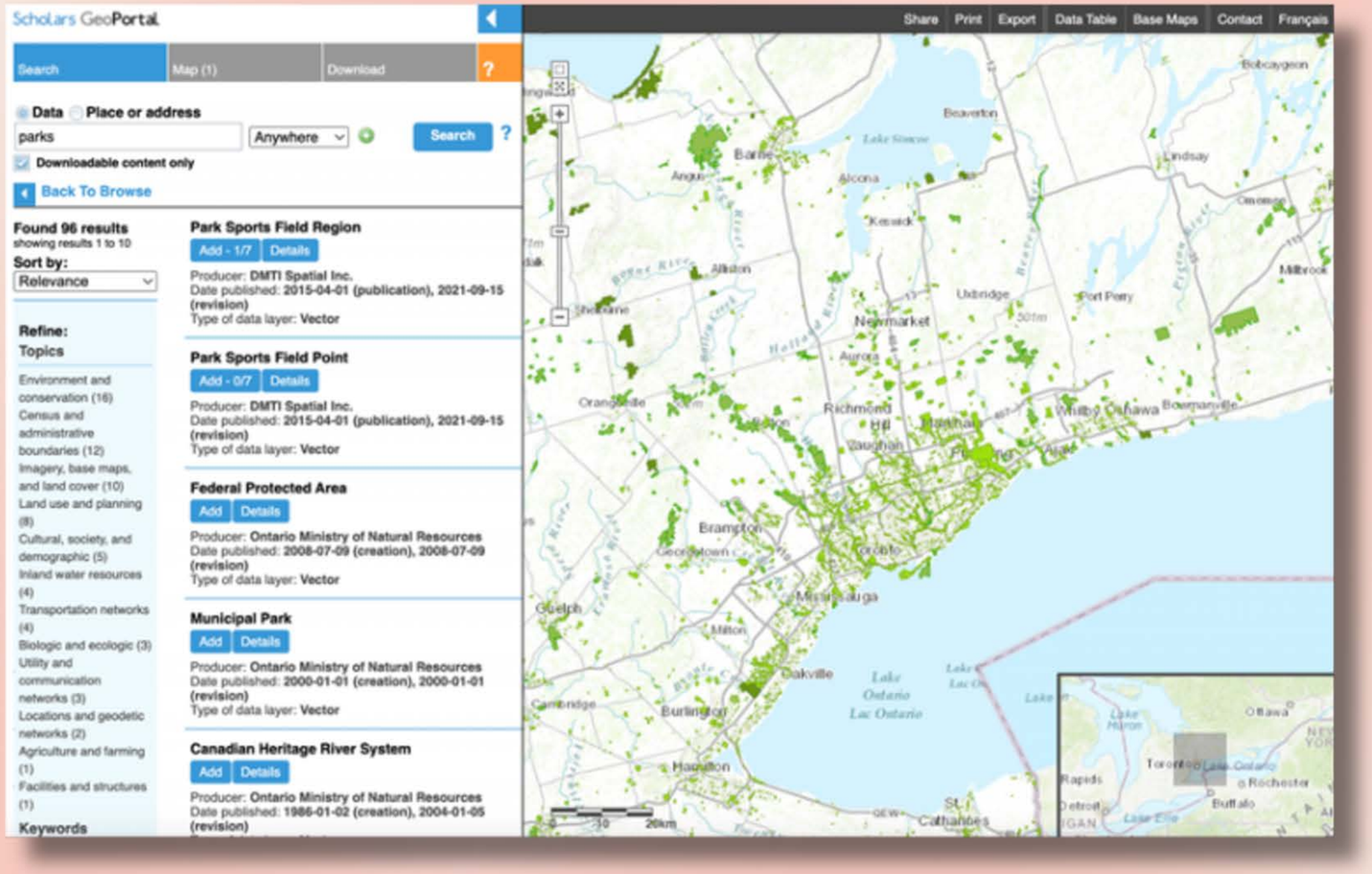
Search for data



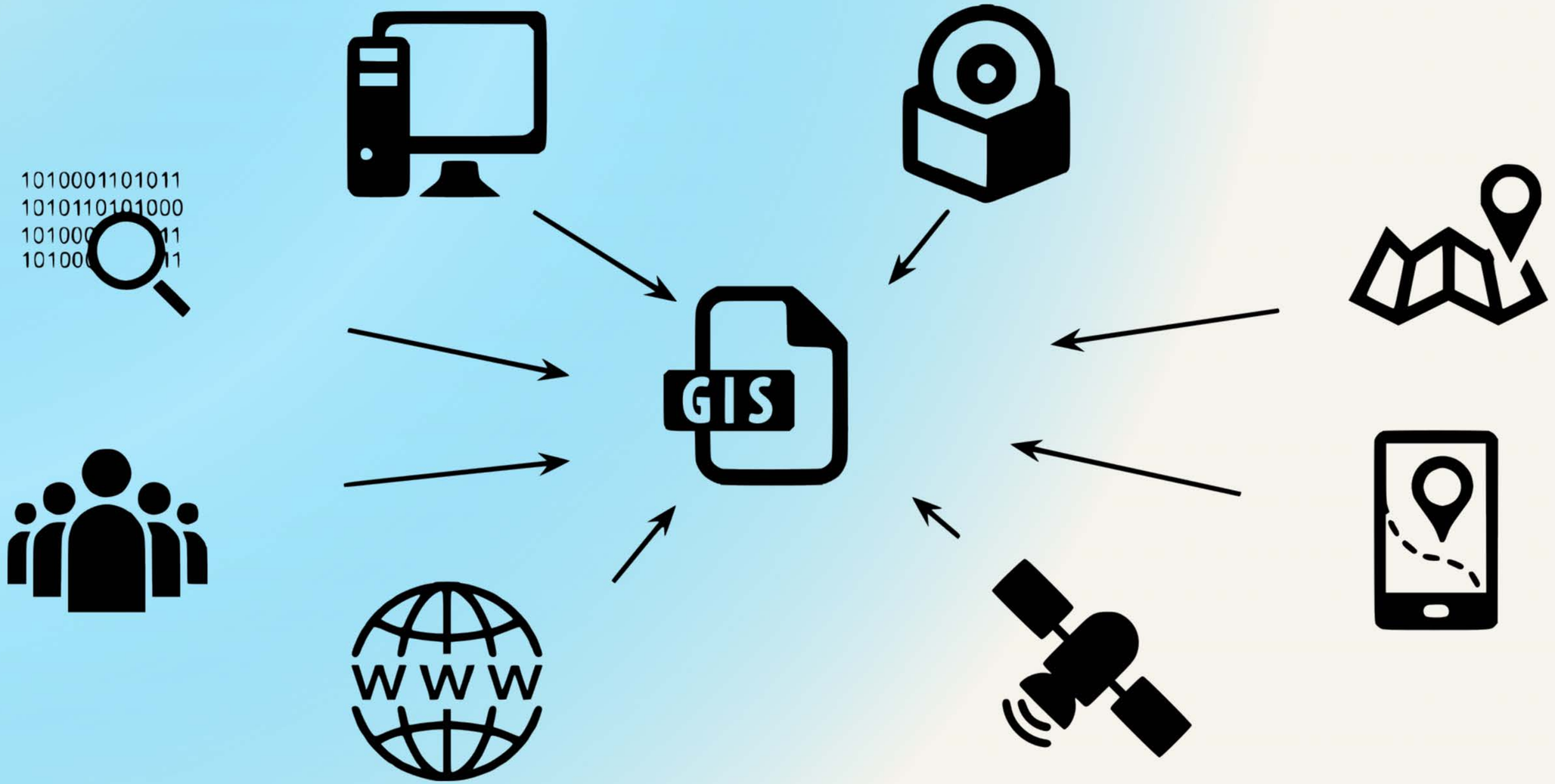


Scholars Geoportal

geo.scholarsportal.info

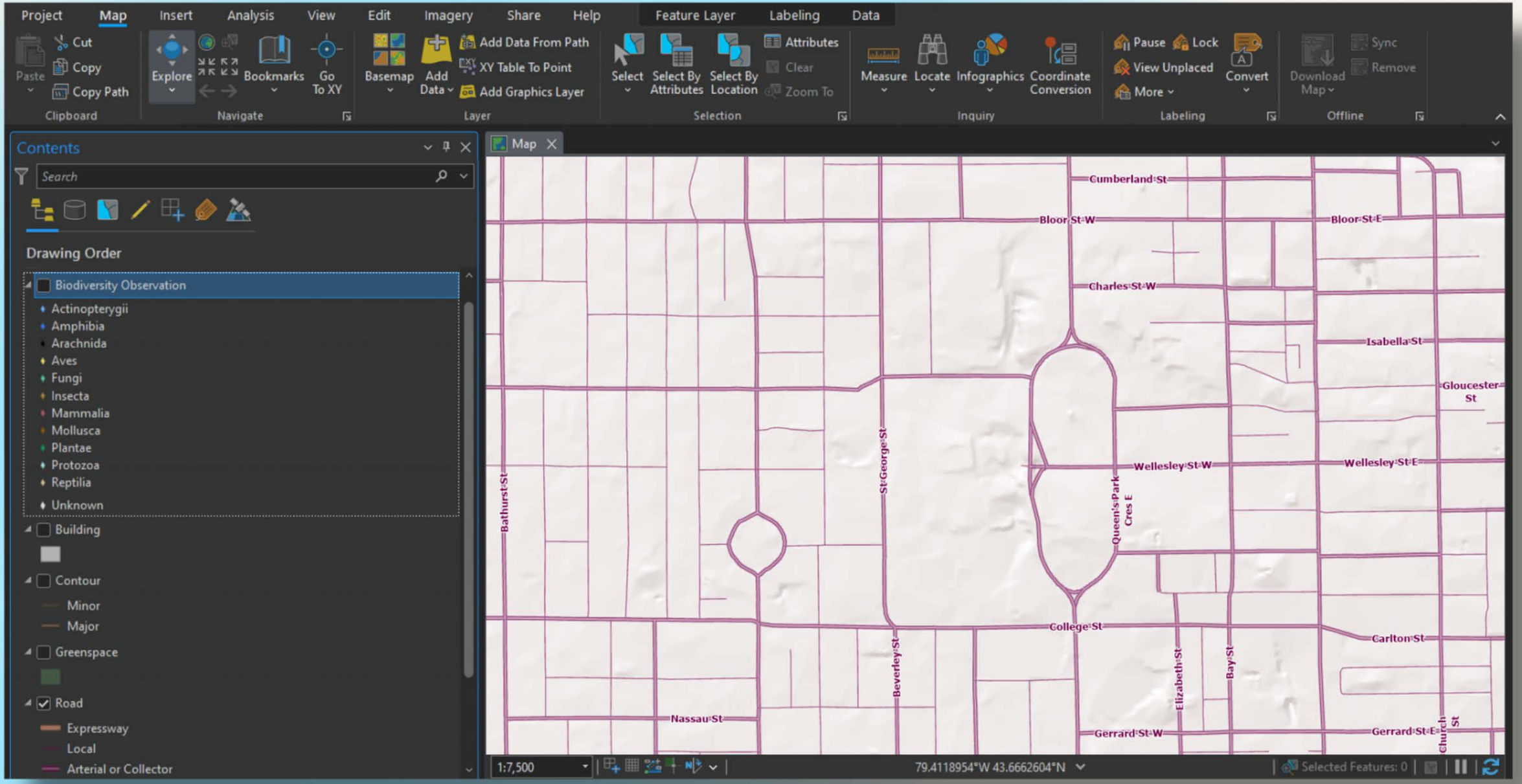


What is GIS?



How is GIS used?

- Choosing the right location
- Finding the best route
- Keeping track of things
- Planning for the future
- Responding to emergencies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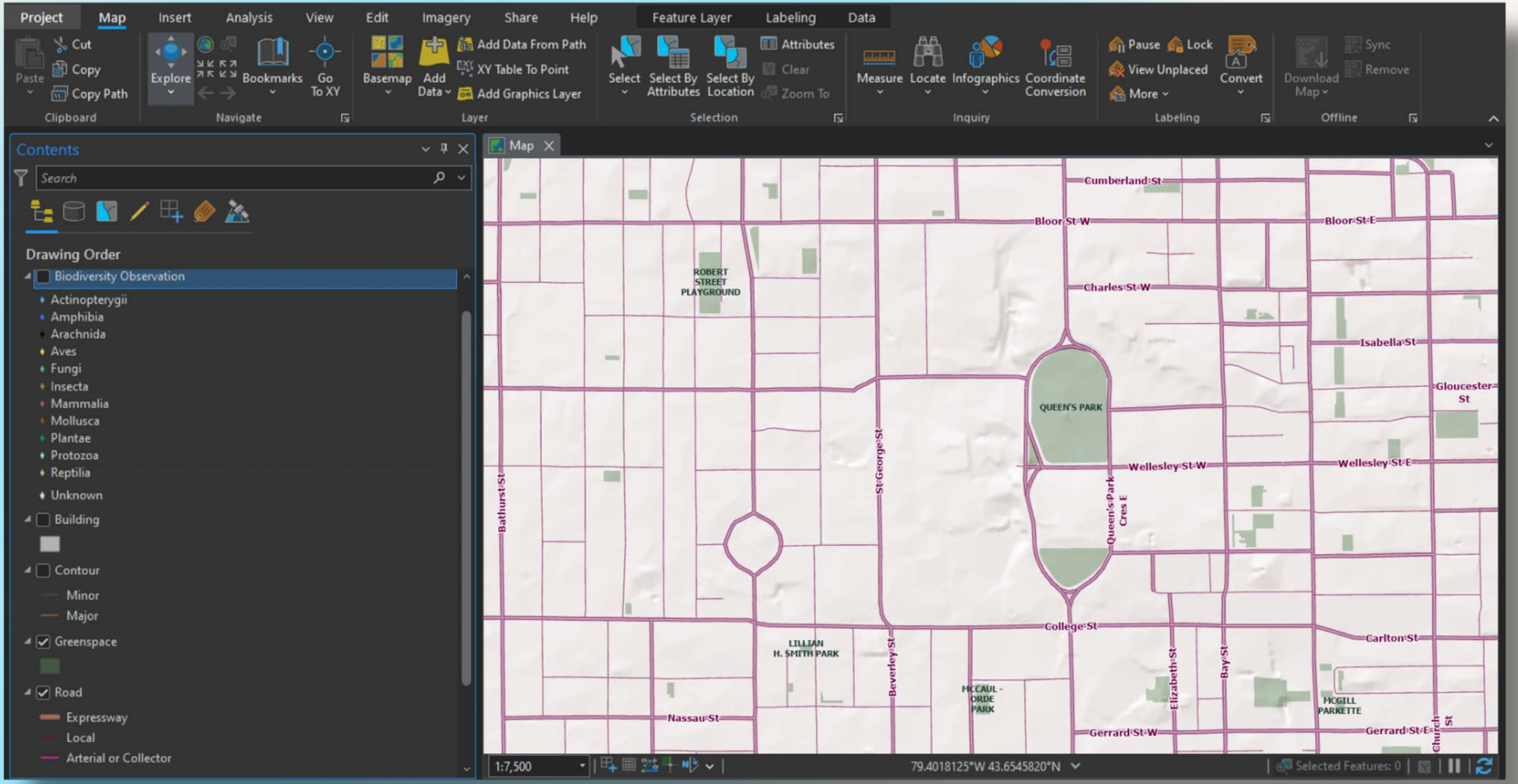
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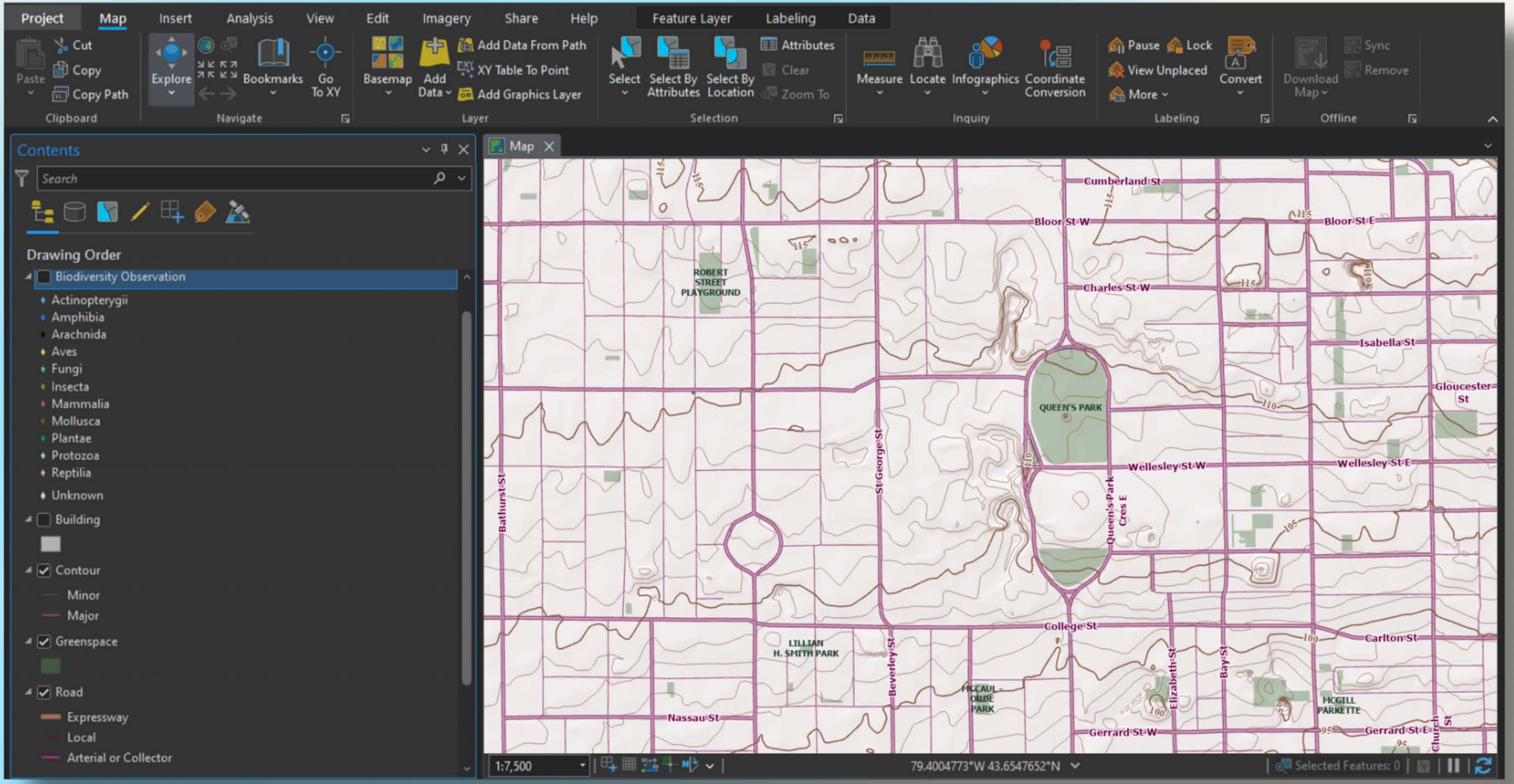
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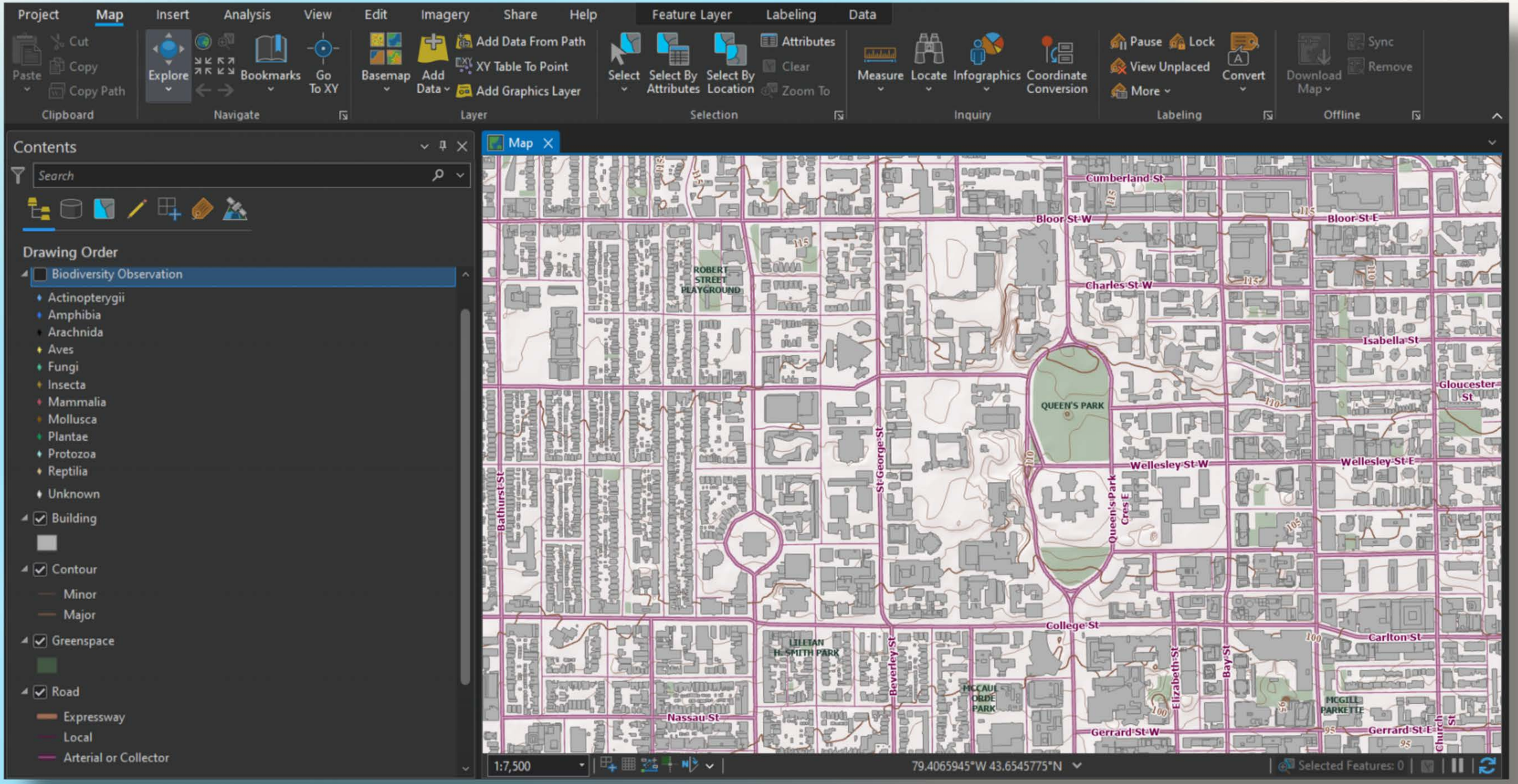
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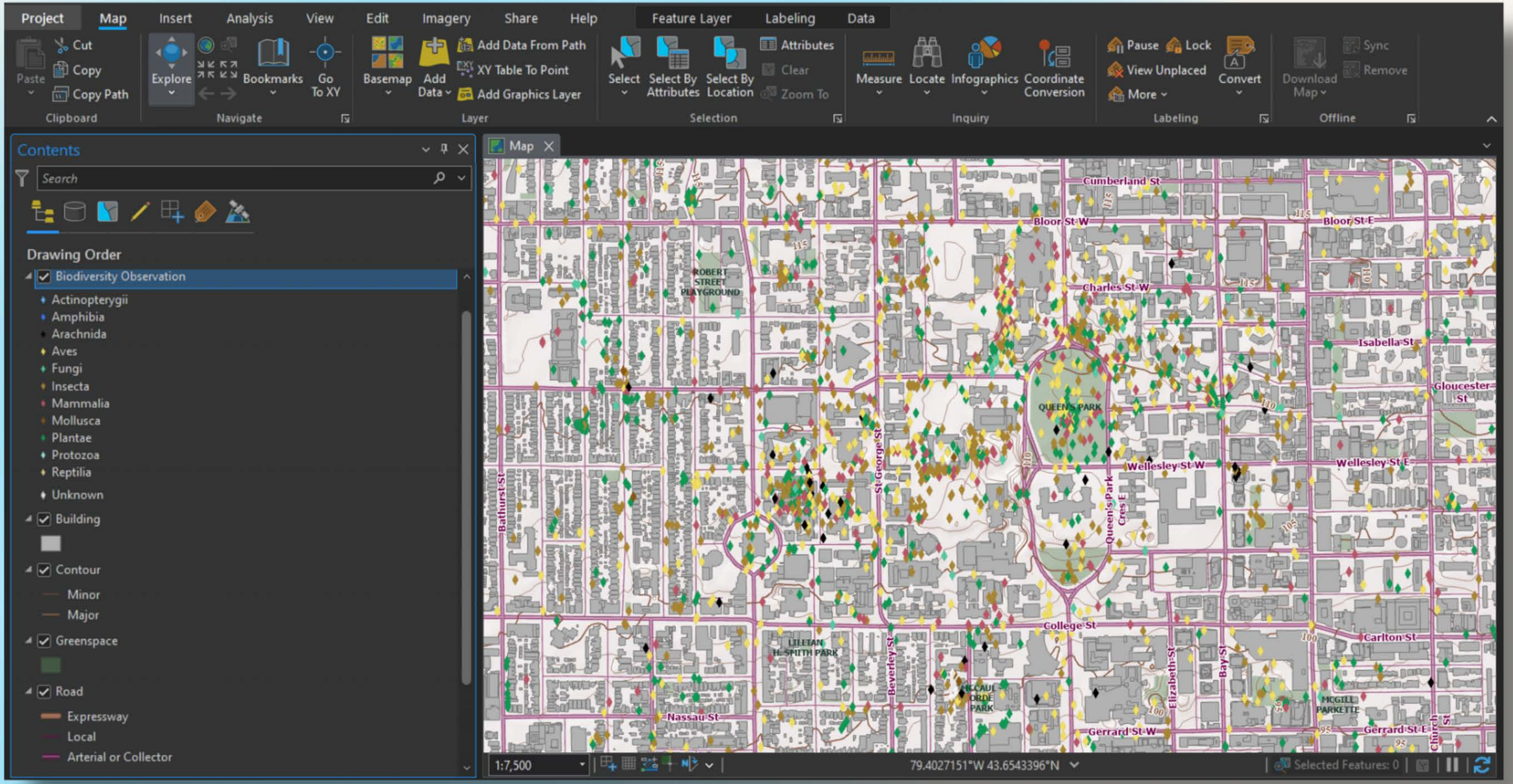
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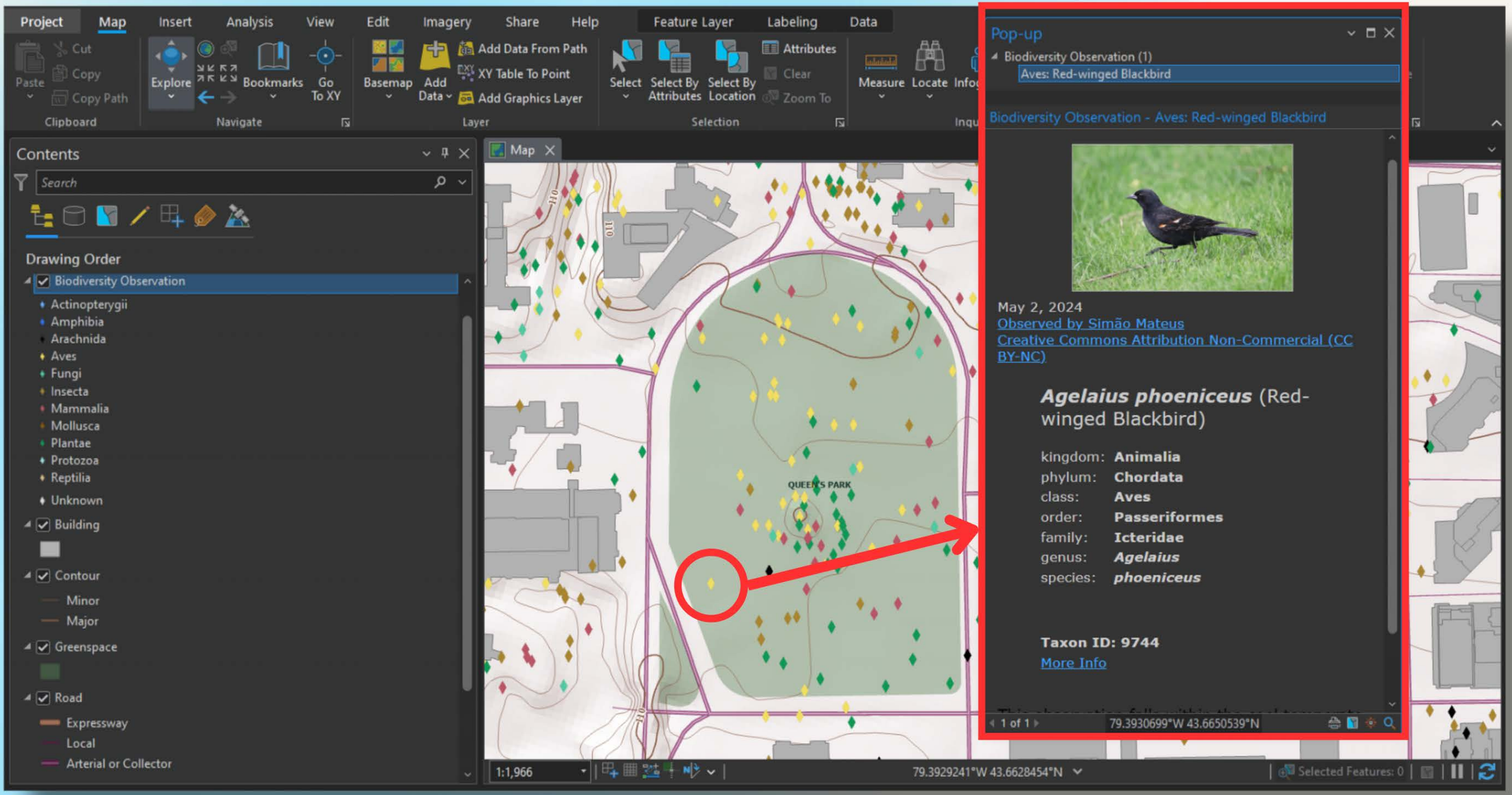
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Pop-up
Biodiversity Observation (1)
Aves: Red-winged Blackbird
Biodiversity Observation - Aves: Red-winged Blackbird
May 2, 2024
Observed by Simão Mateus
Creative Commons Attribution Non-Commercial (CC BY-NC)
Agelaius phoeniceus (Red-winged Blackbird)
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

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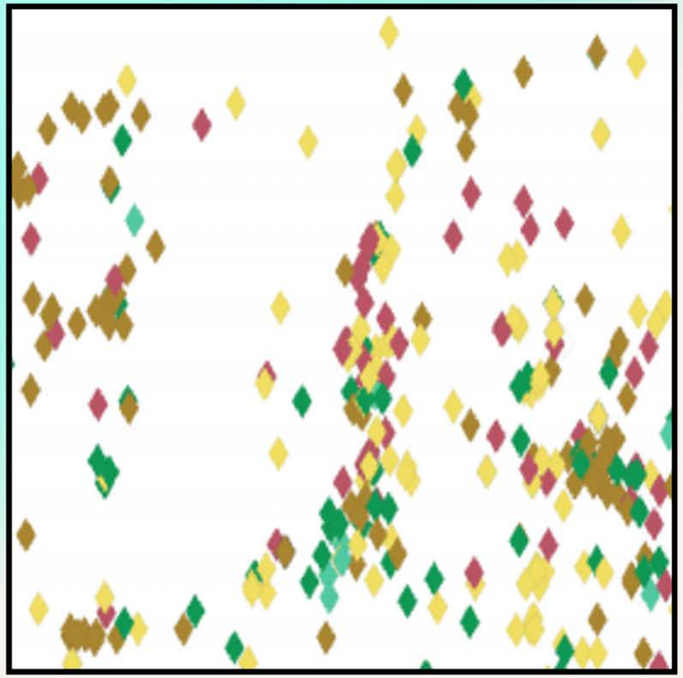

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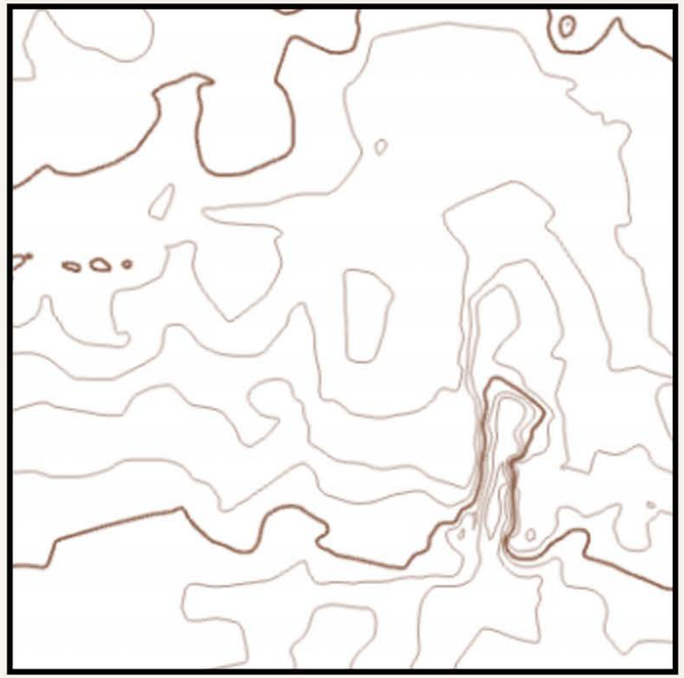
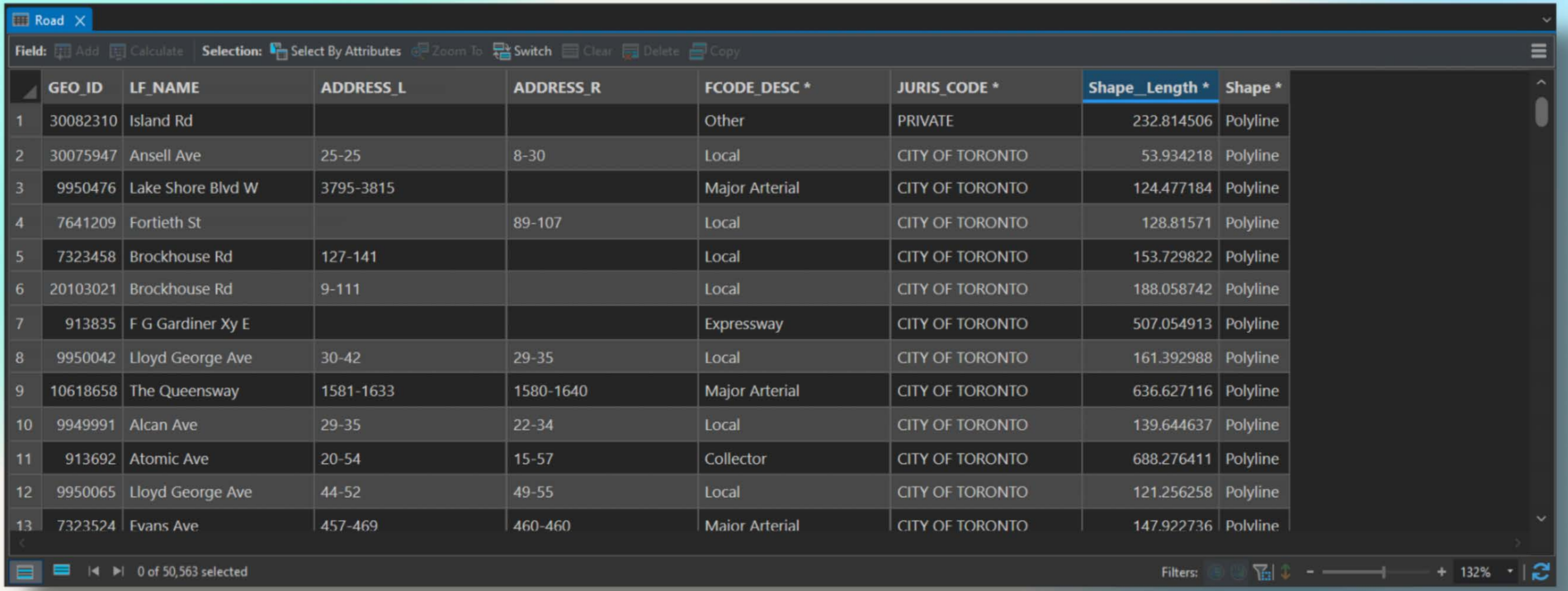


Lines

Polygons

Vector Data: Attribute Table



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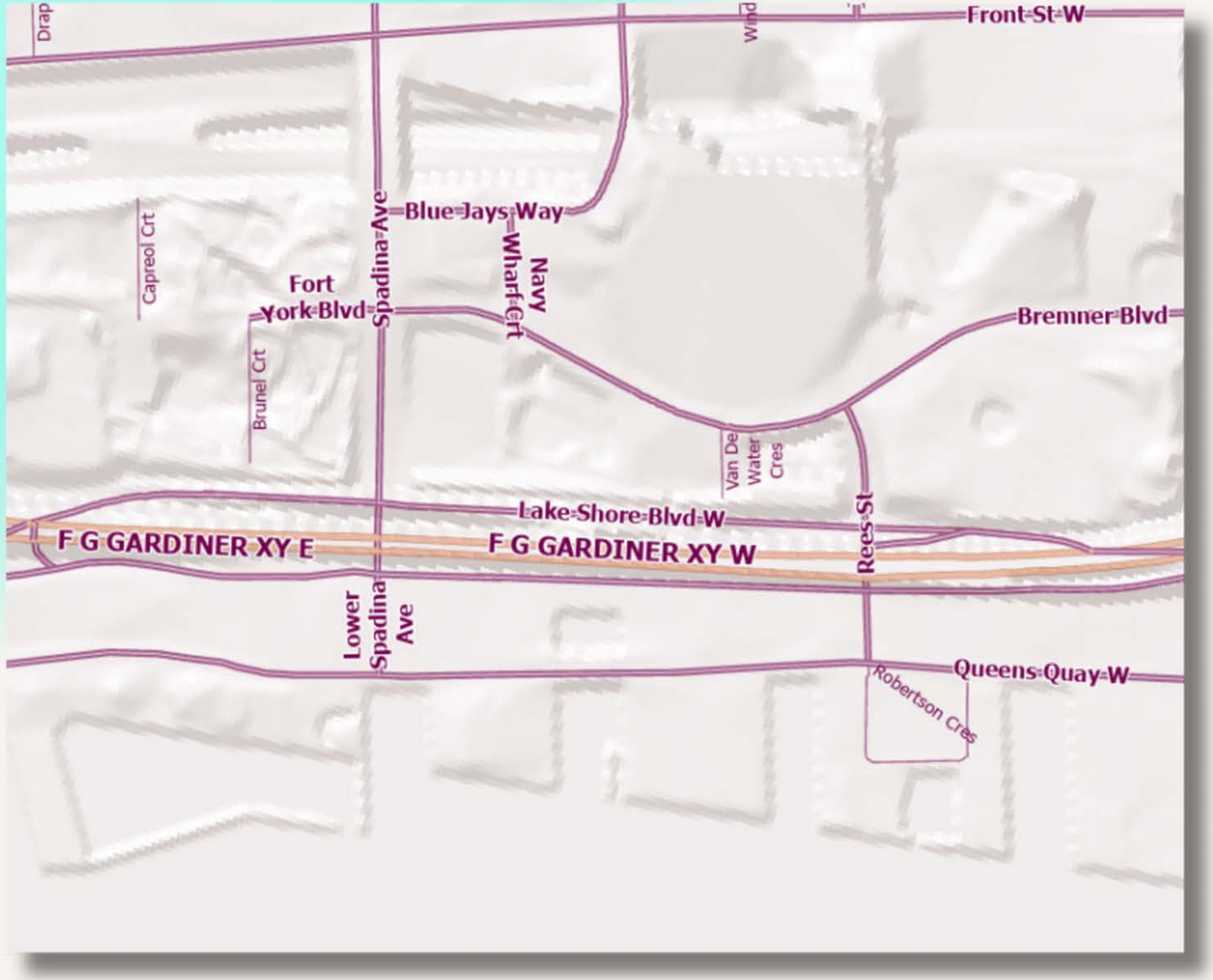
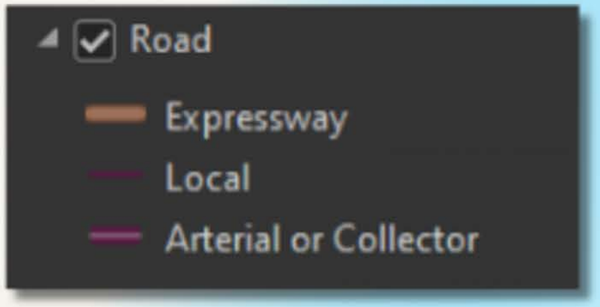
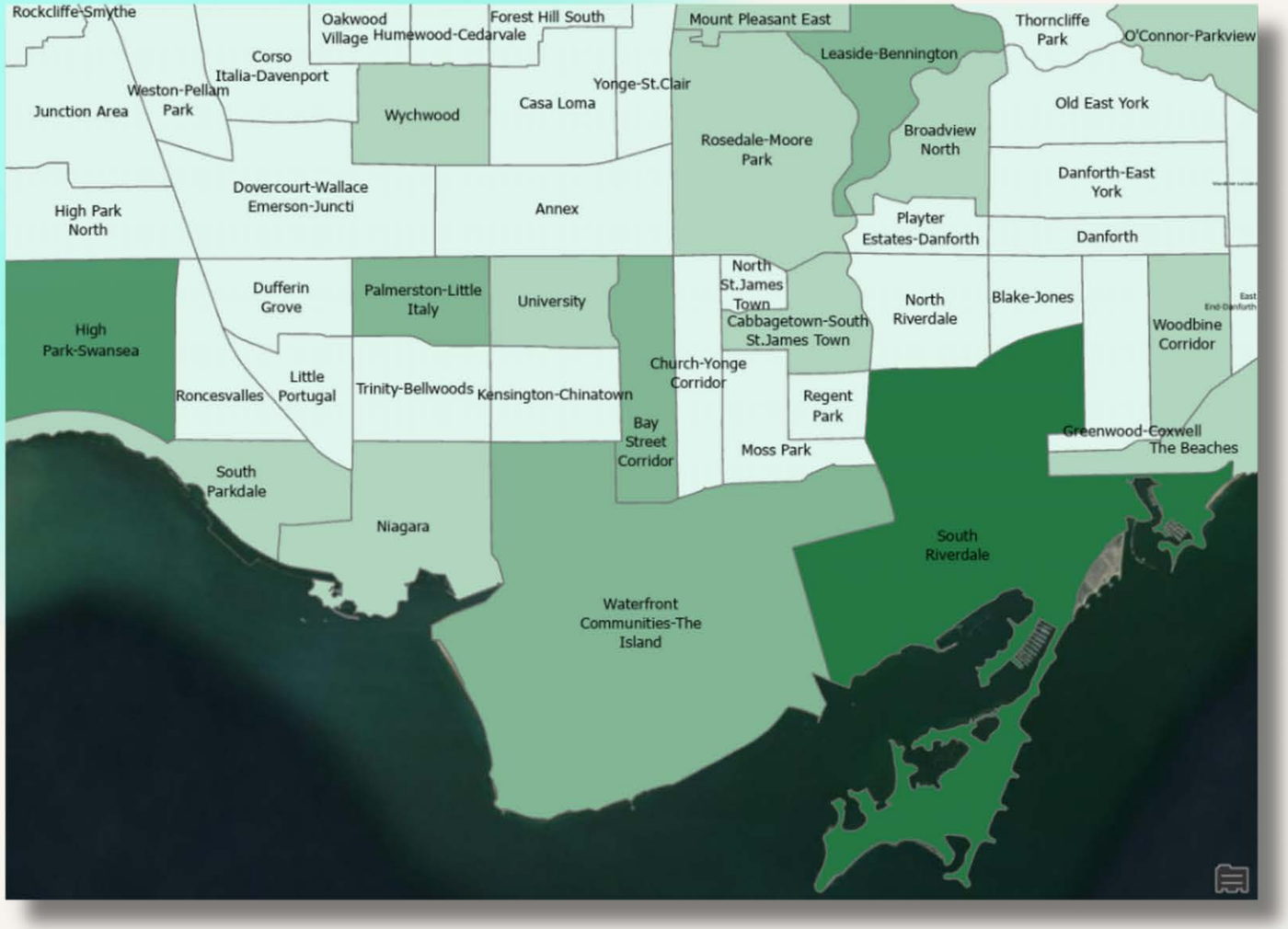
3	9950476	Lake Shore Blvd W	3795-3815		Major Arterial	CITY OF TORONTO	124.477184	Polyline
4	7641209	Fortieth St		89-107	Local	CITY OF TORONTO	128.81571	Polyline
5	7323458	Brockhouse Rd	127-141		Local	CITY OF TORONTO	153.729822	Polyline
6	20103021	Brockhouse Rd	9-111		Local	CITY OF TORONTO	188.058742	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

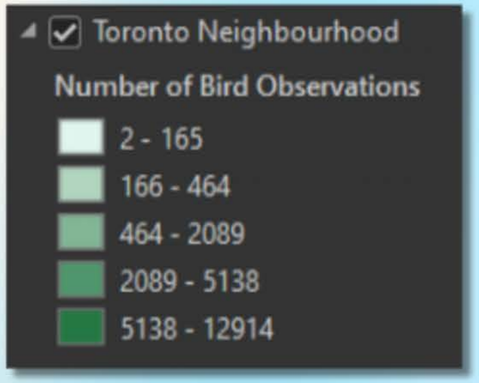
Vector Data: Symbology



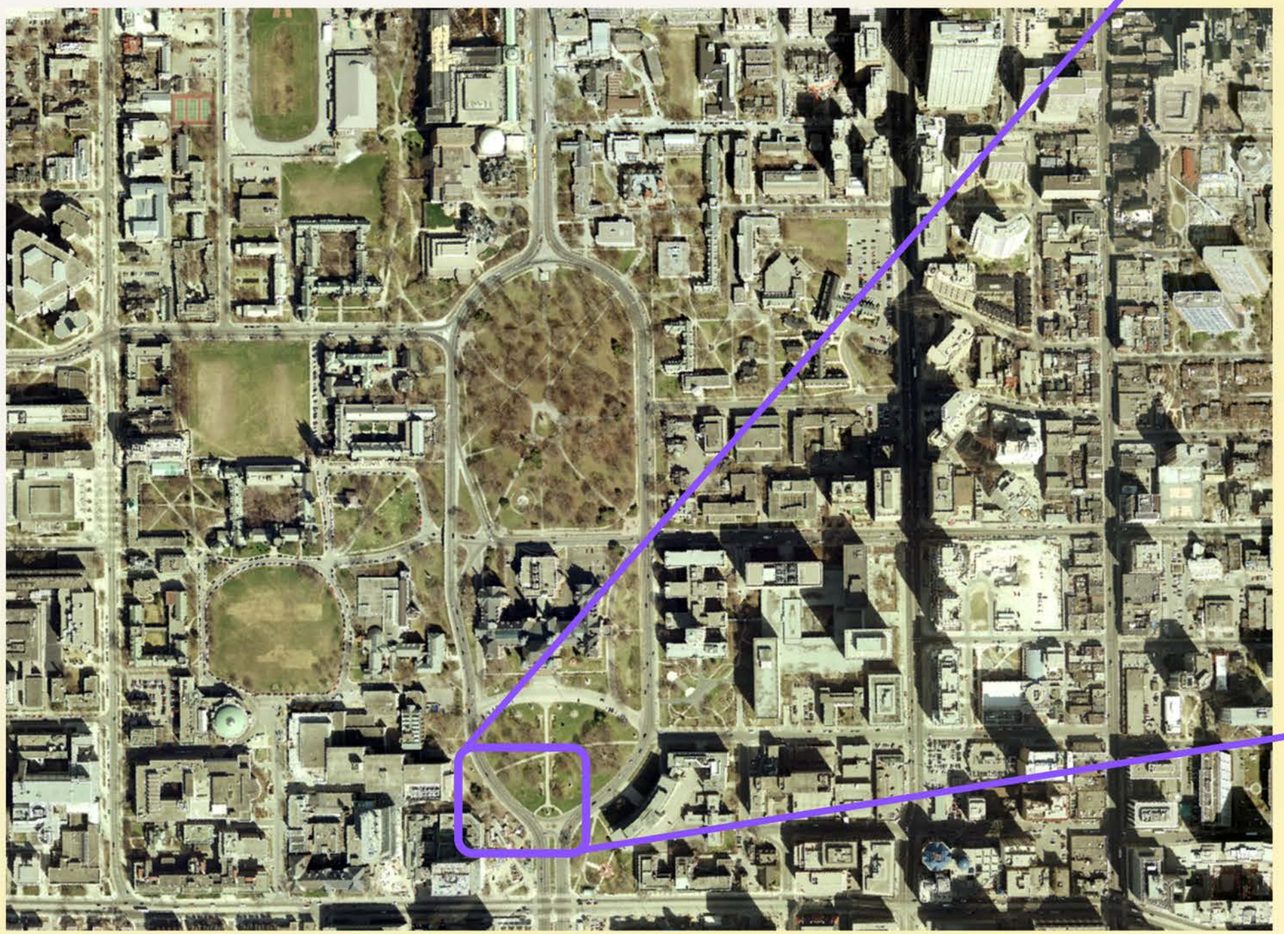


Vector Data: Symbology





Raster Data



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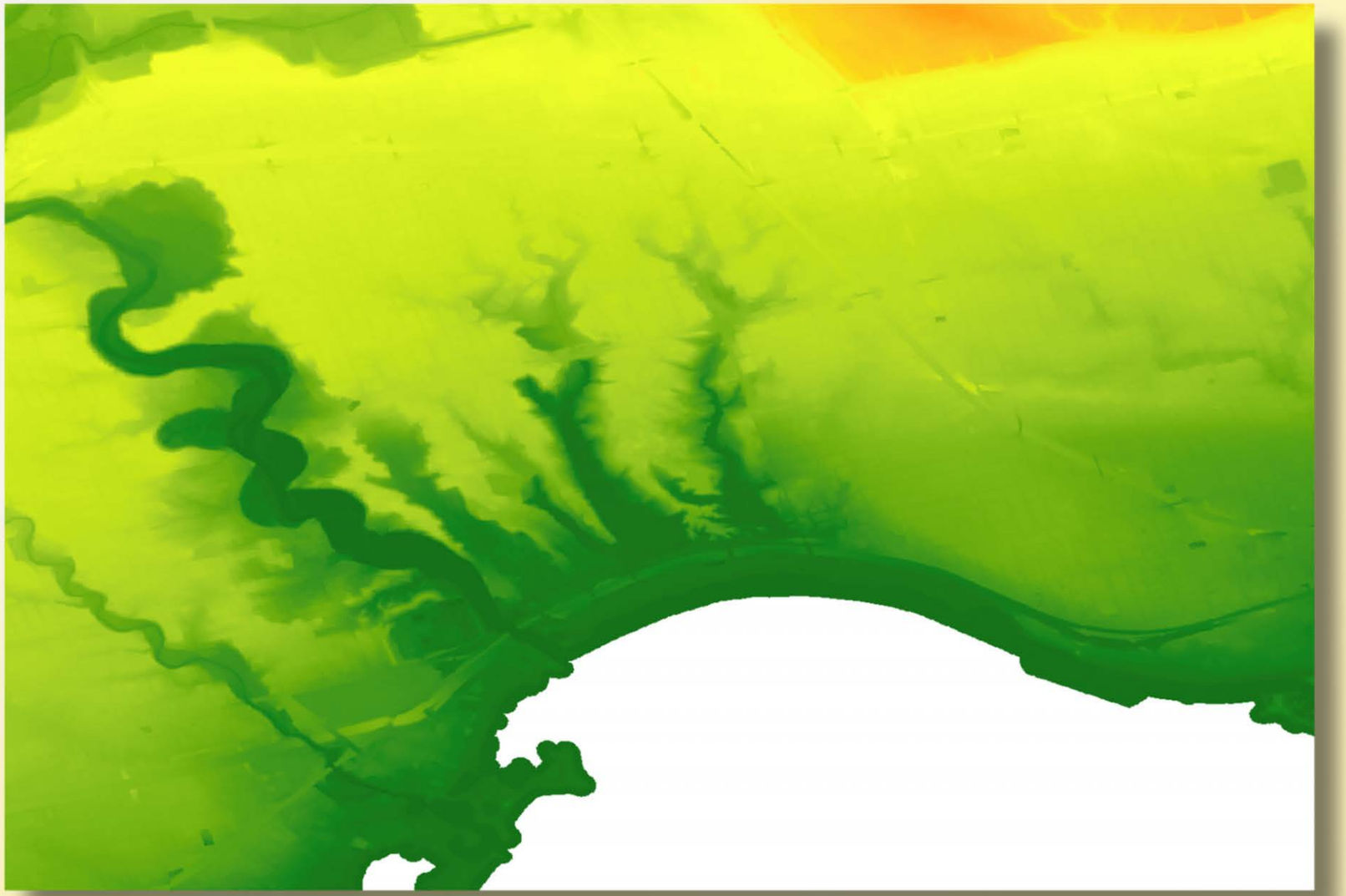


Raster Data

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

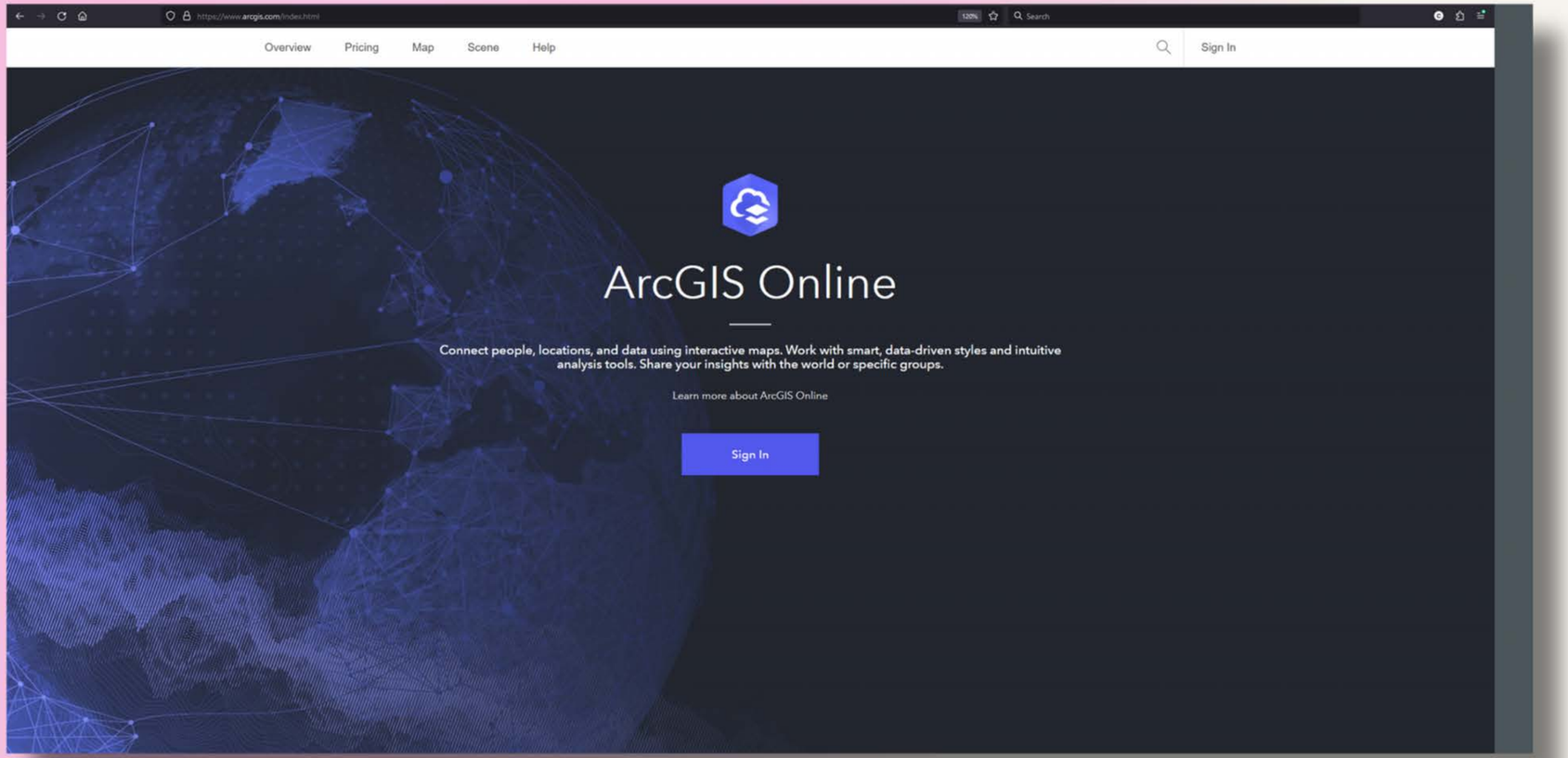
ArcGIS Online - web-based ArcGIS mapping platform

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)*

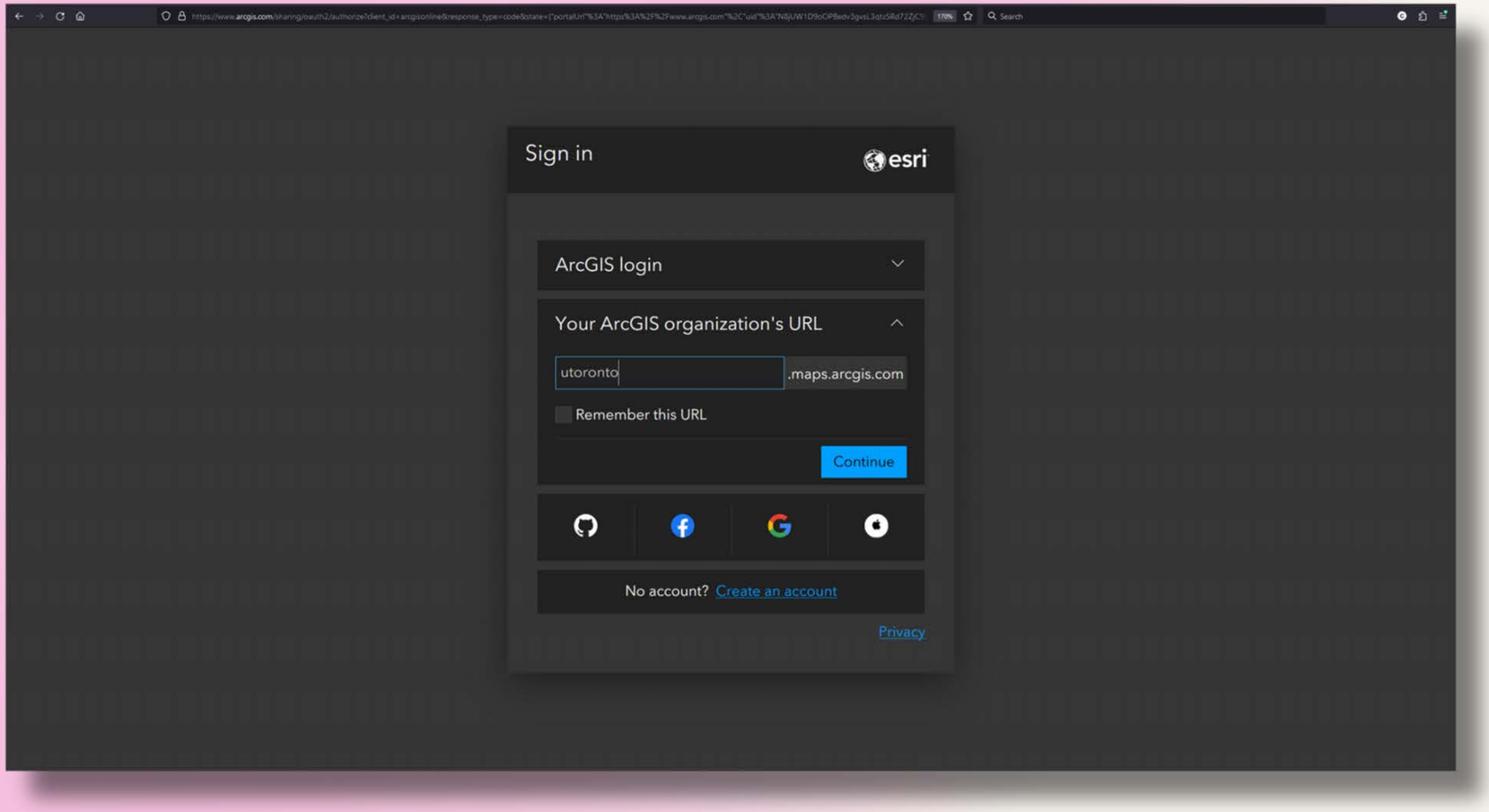
Install ArcGIS Pro

- Open a web browser
- Navigate to arcgis.com (or utoronto.maps.arcgis.com)



Install ArcGIS Pro

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



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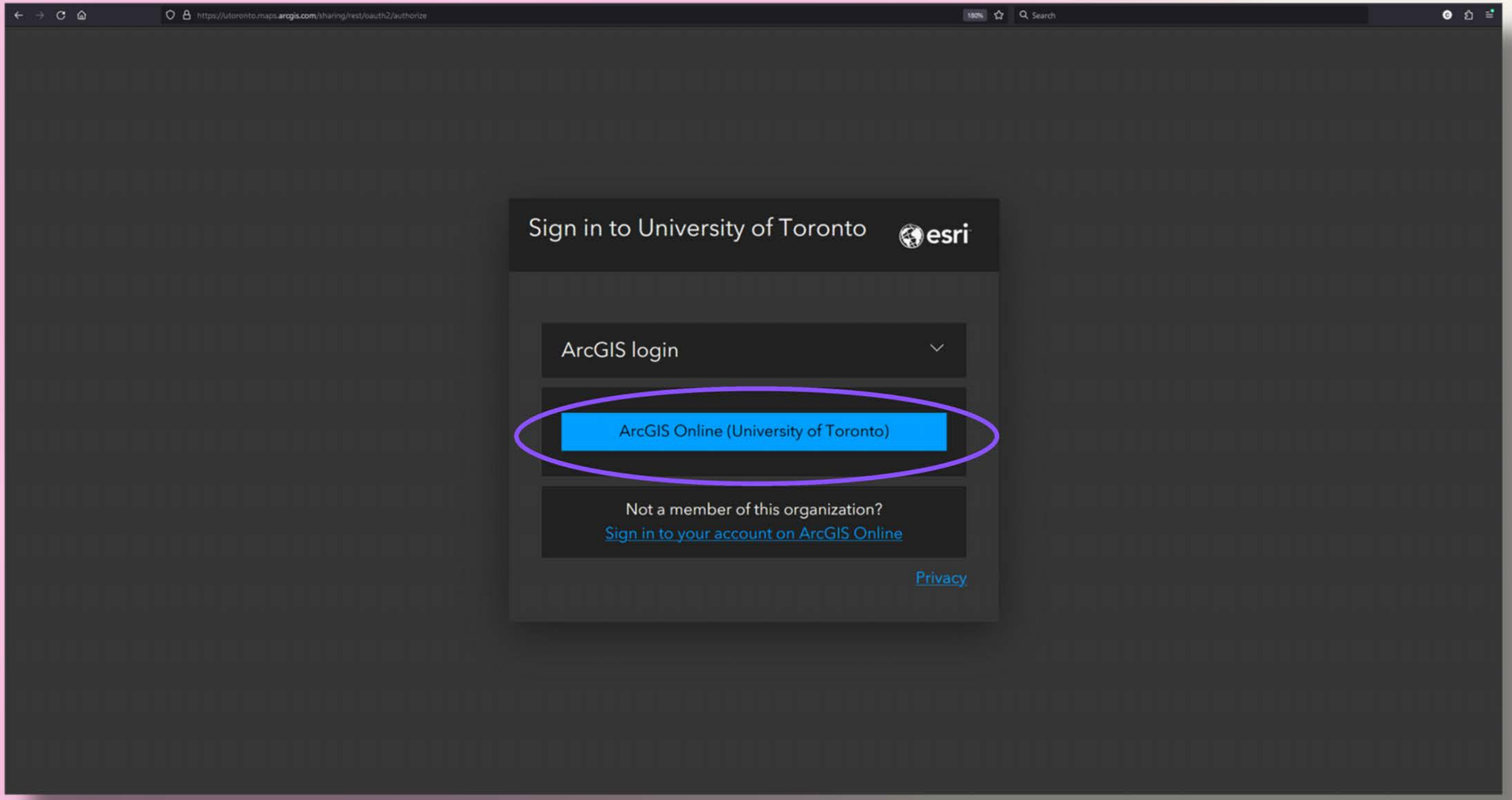

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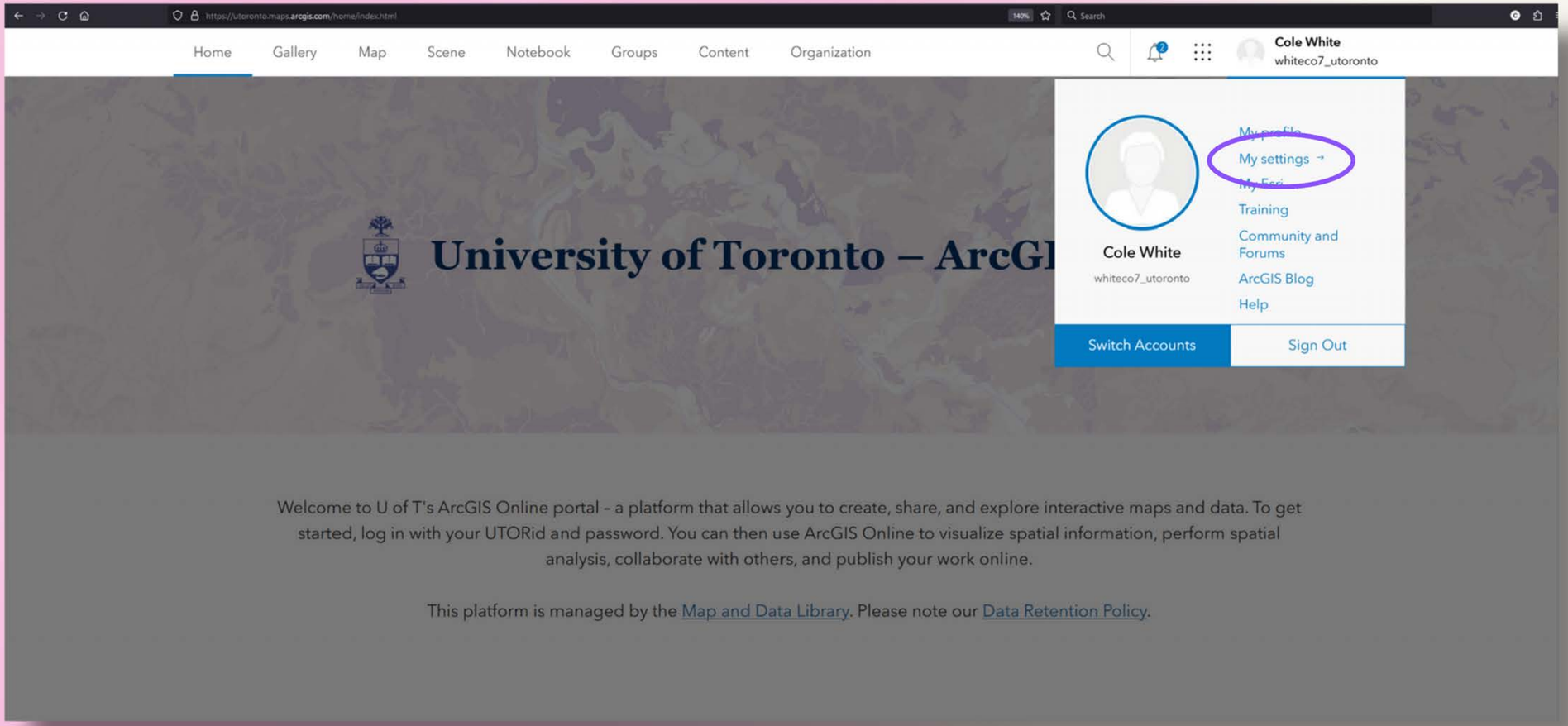

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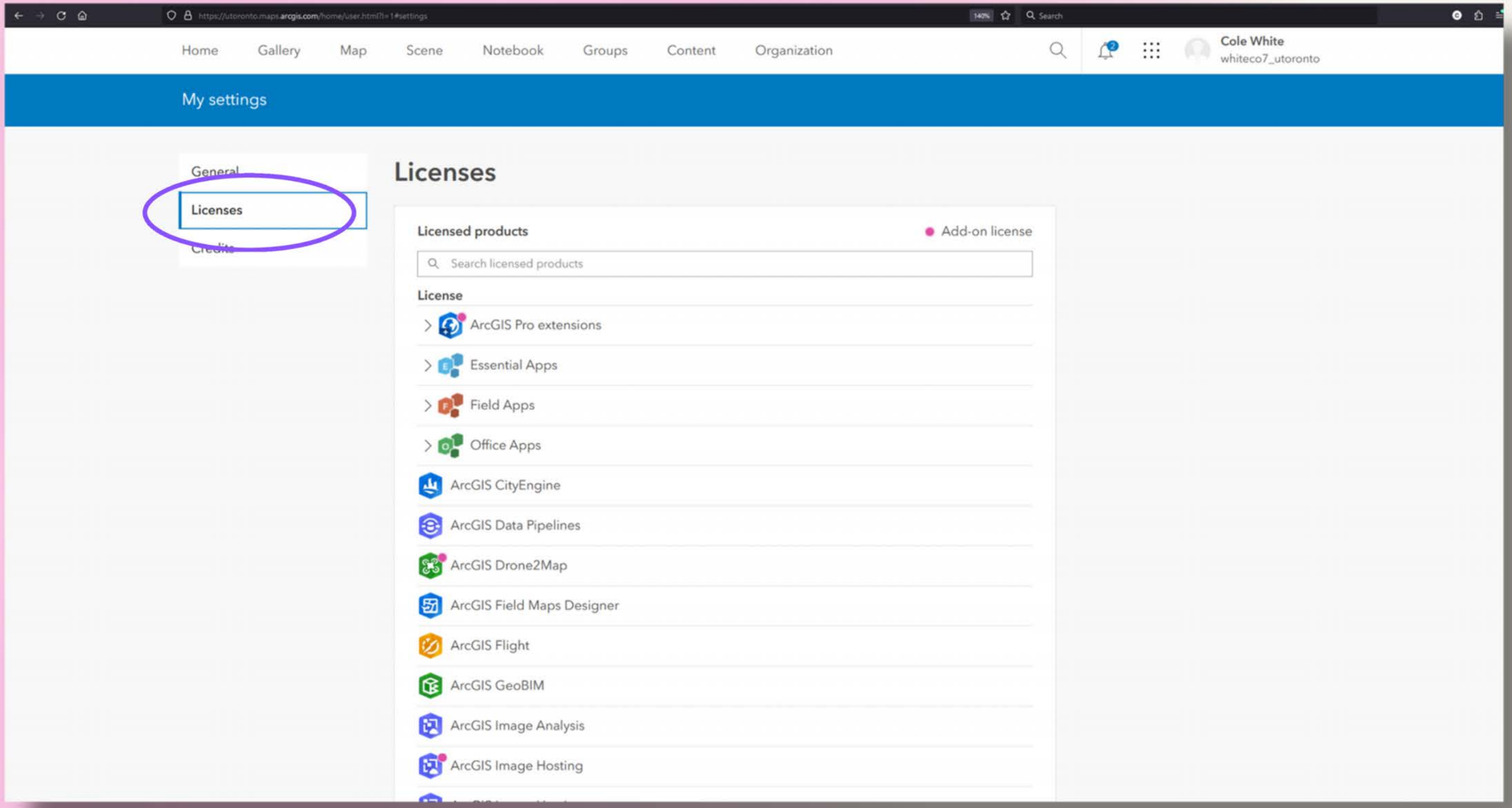

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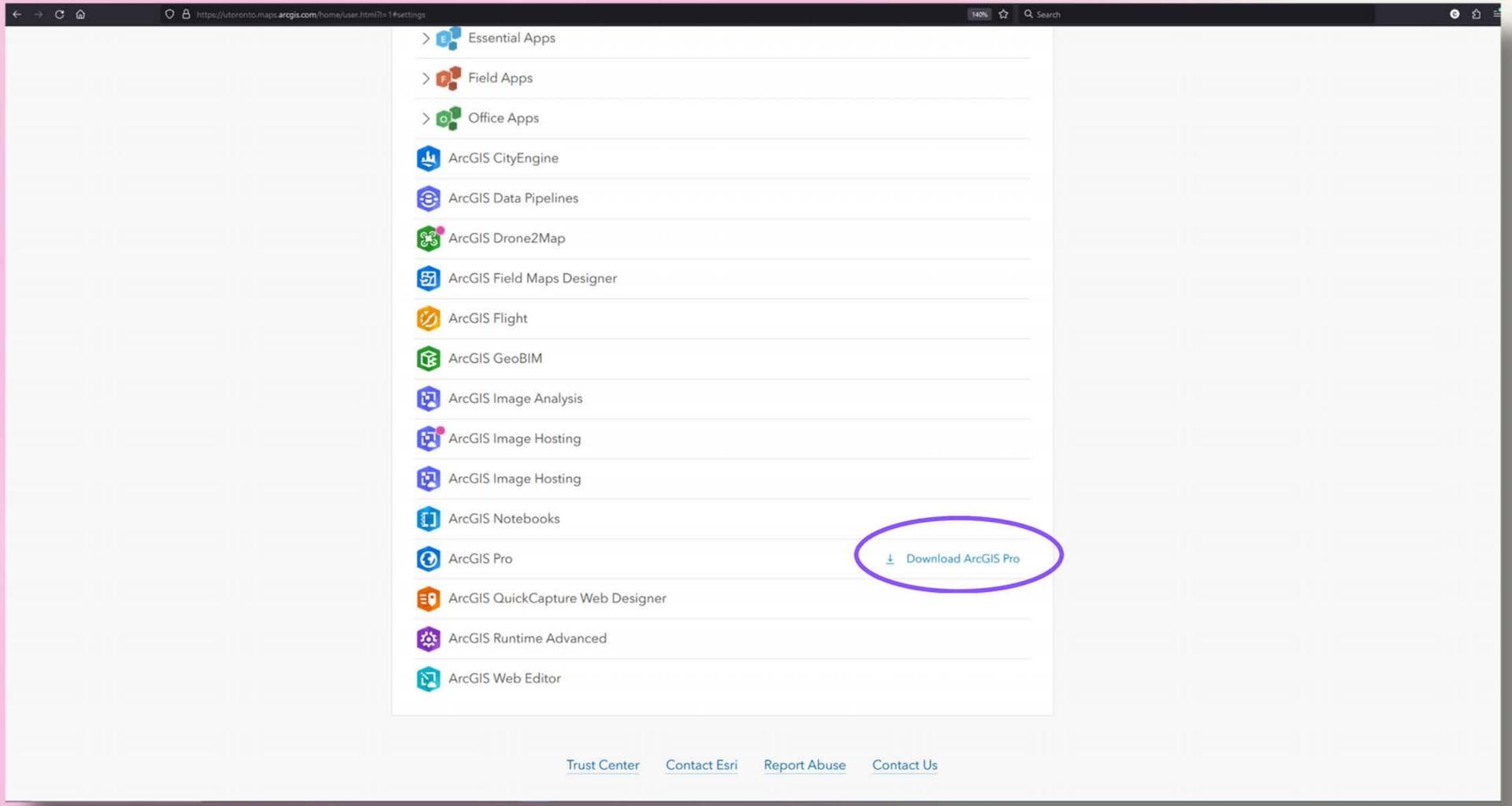
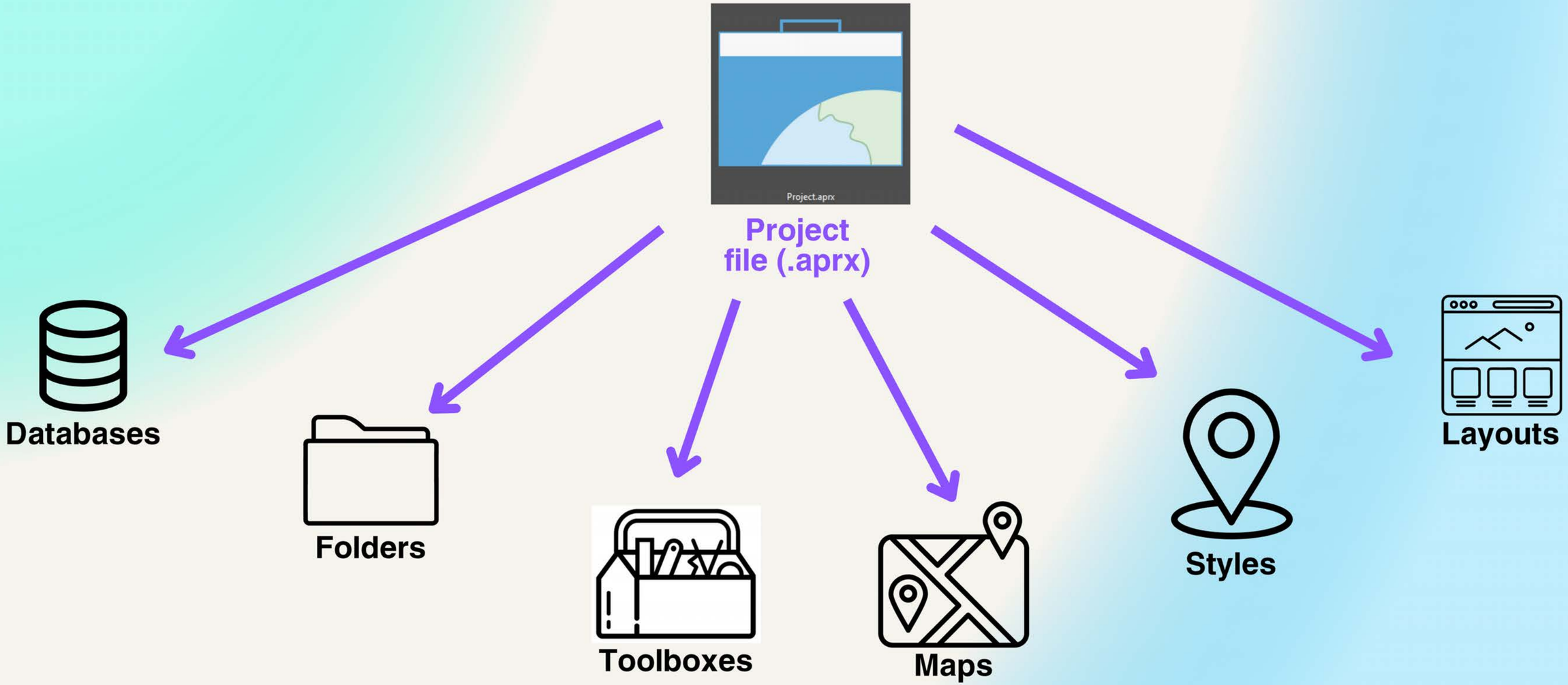


Install ArcGIS Pro

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

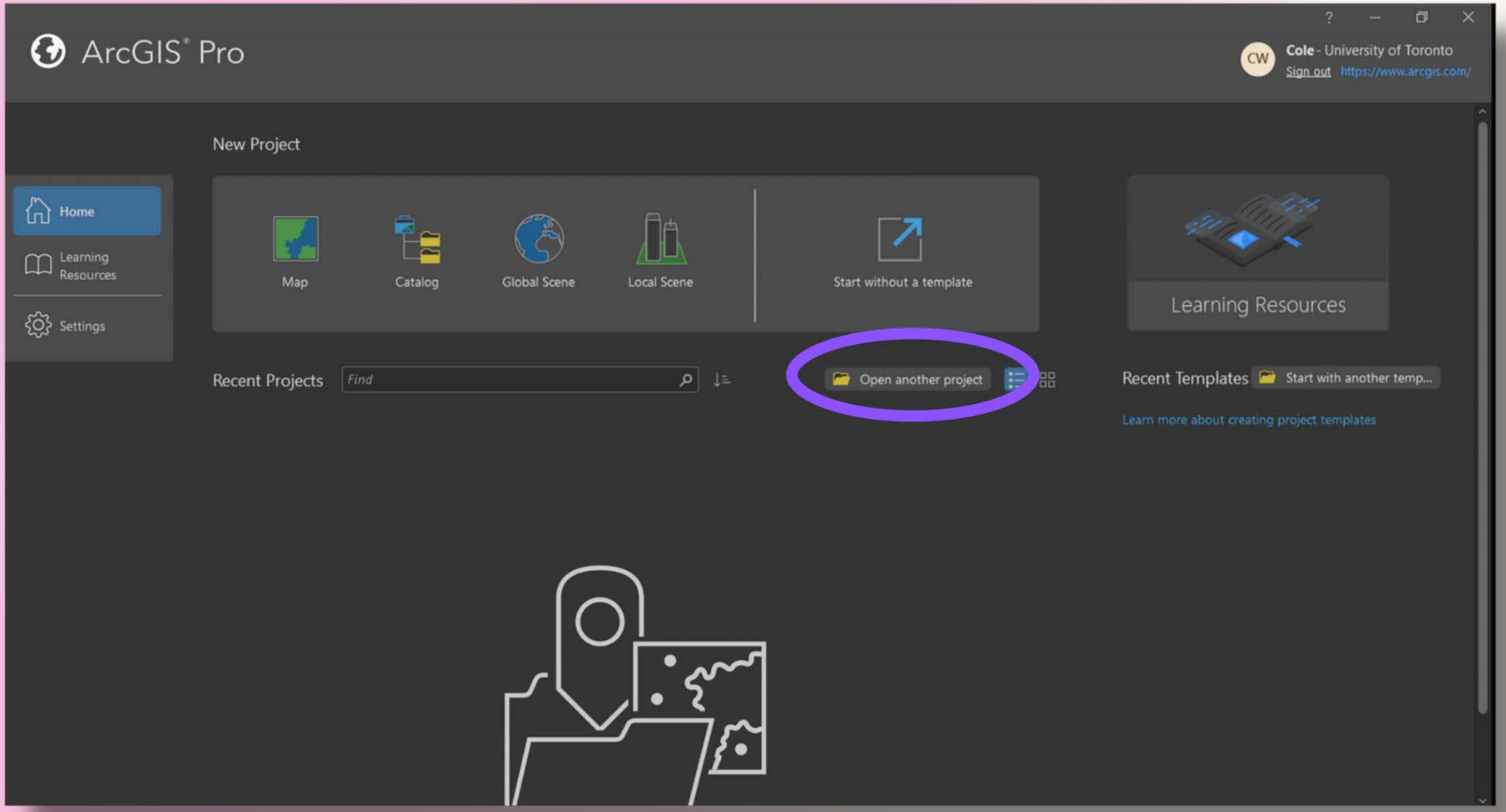
Projects in ArcGIS Pro



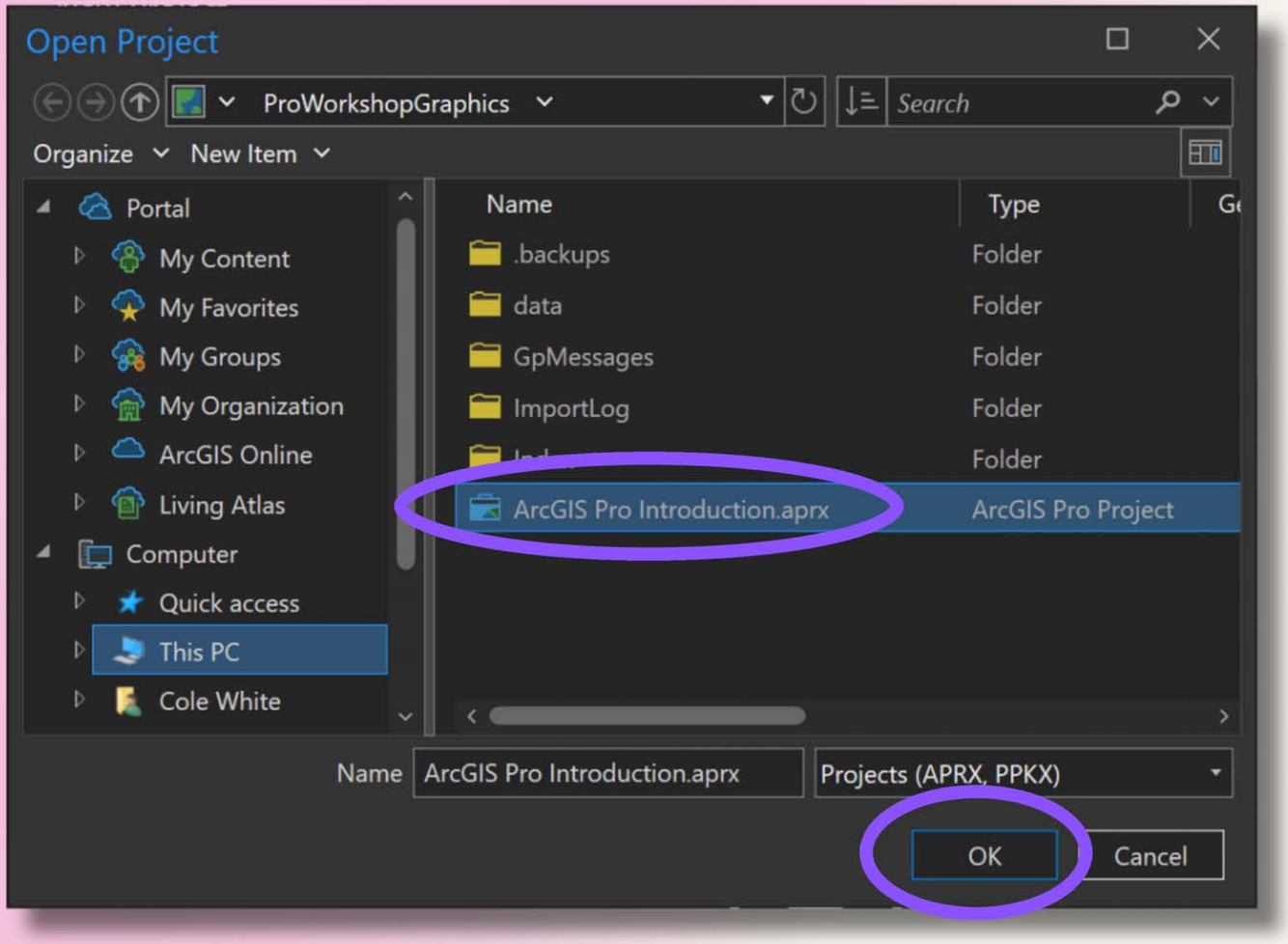
Download and unzip the sample data:

https://uoft.me/IntroToPro

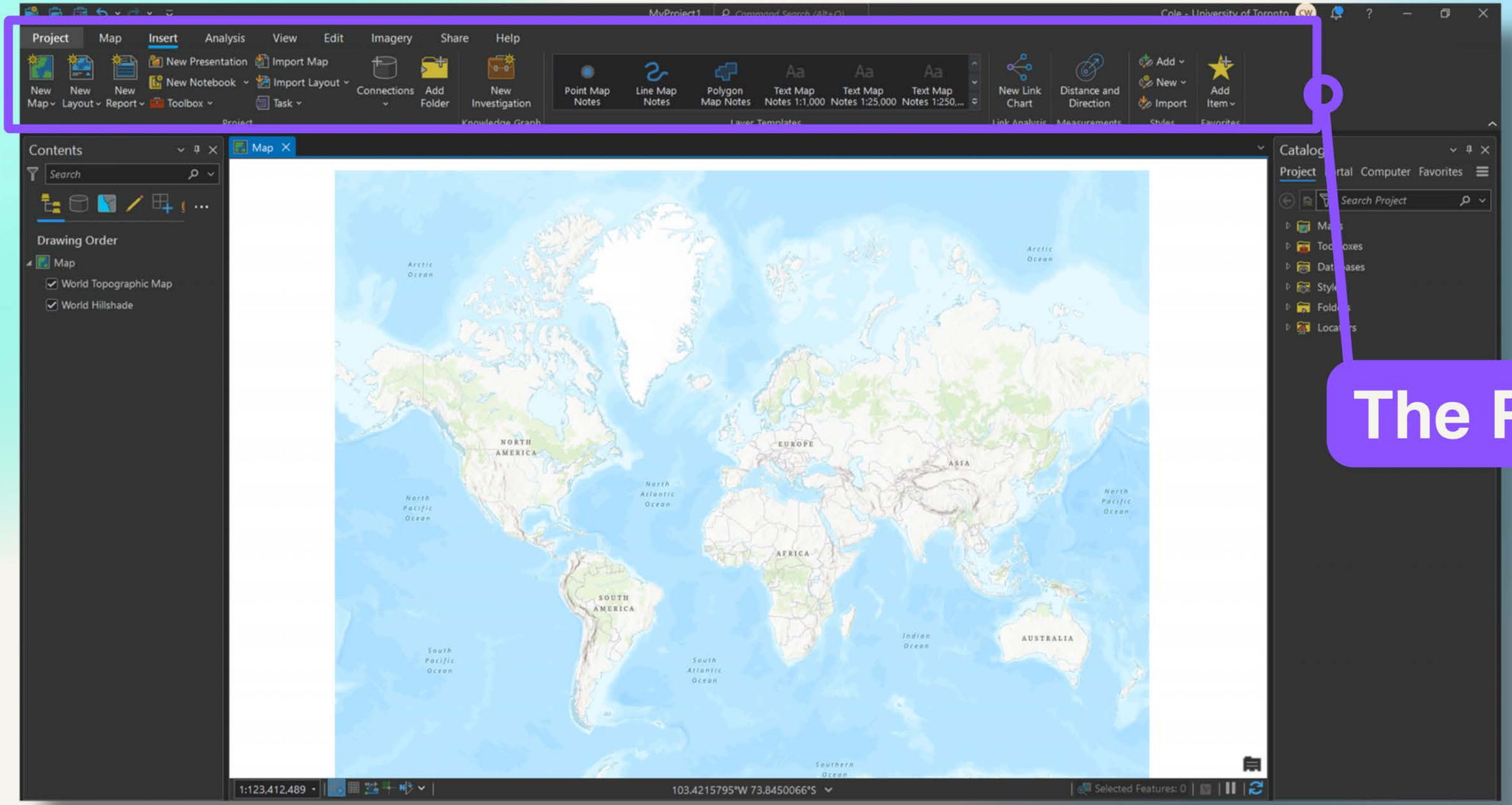
- Launch ArcGIS Pro
- Choose **Open Another Project**



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



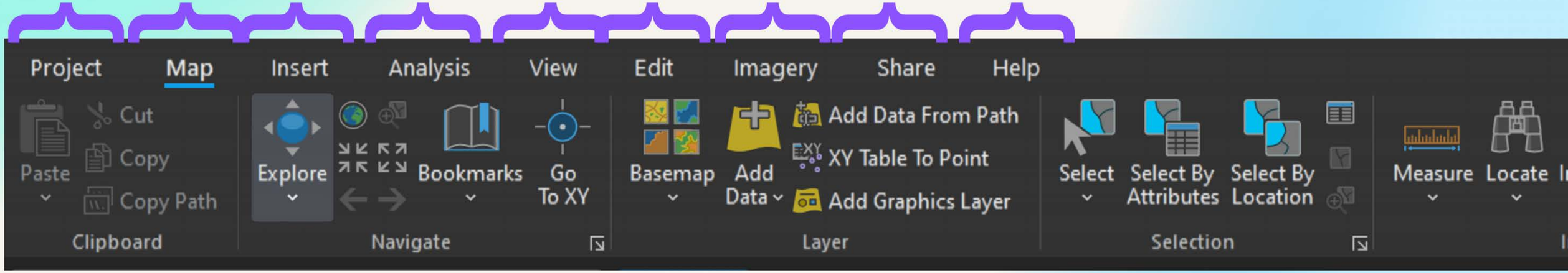
The Pro User Interface



The Ribbon

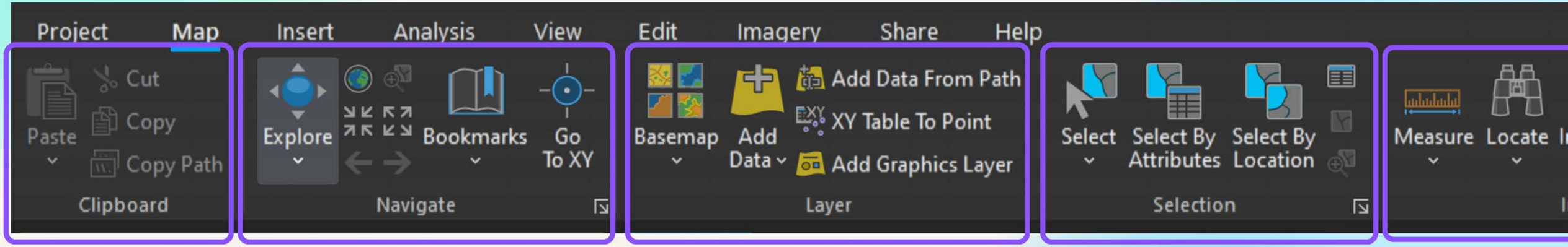
The Pro User Interface

Tabs

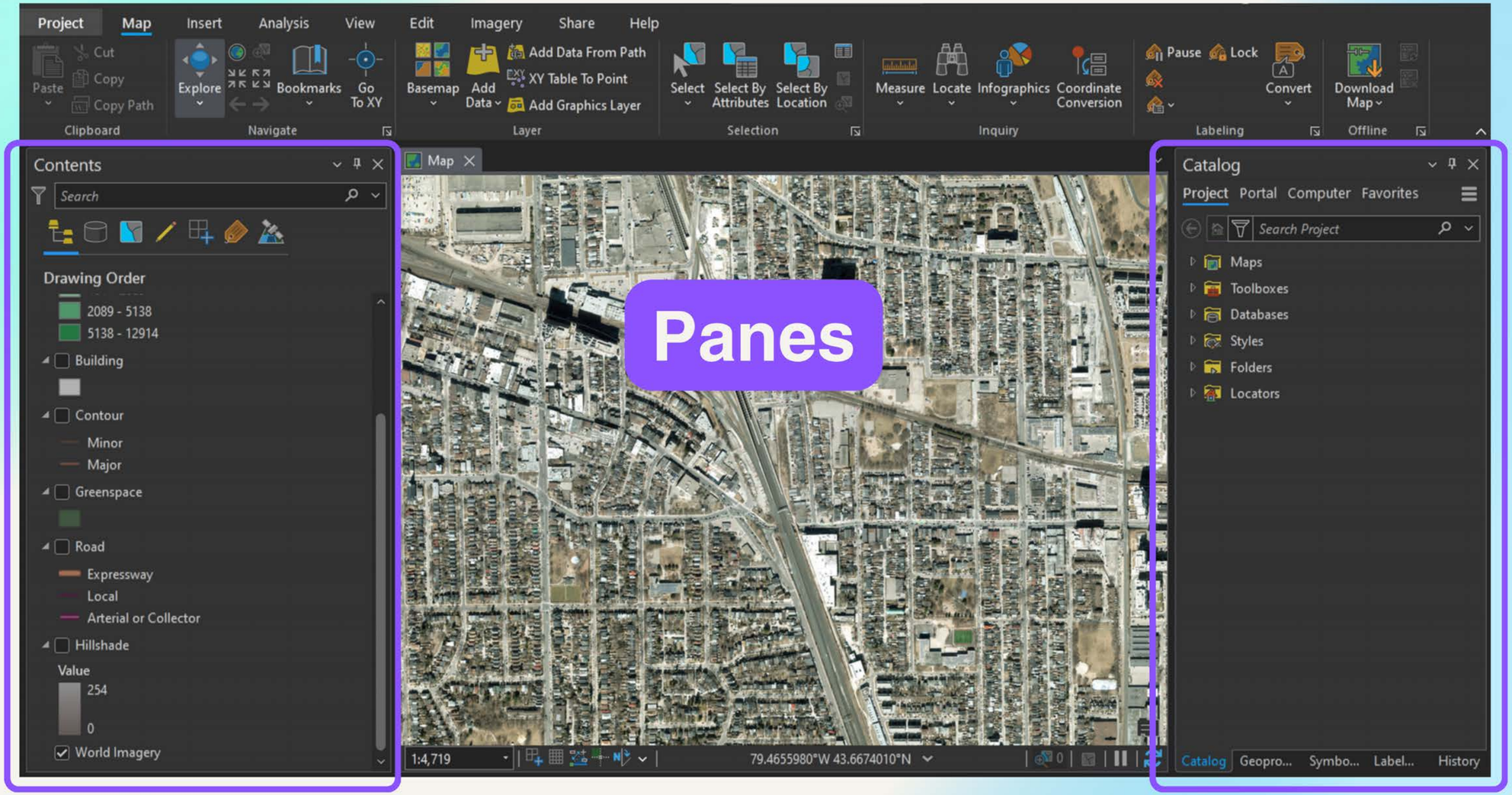


The Pro User Interface

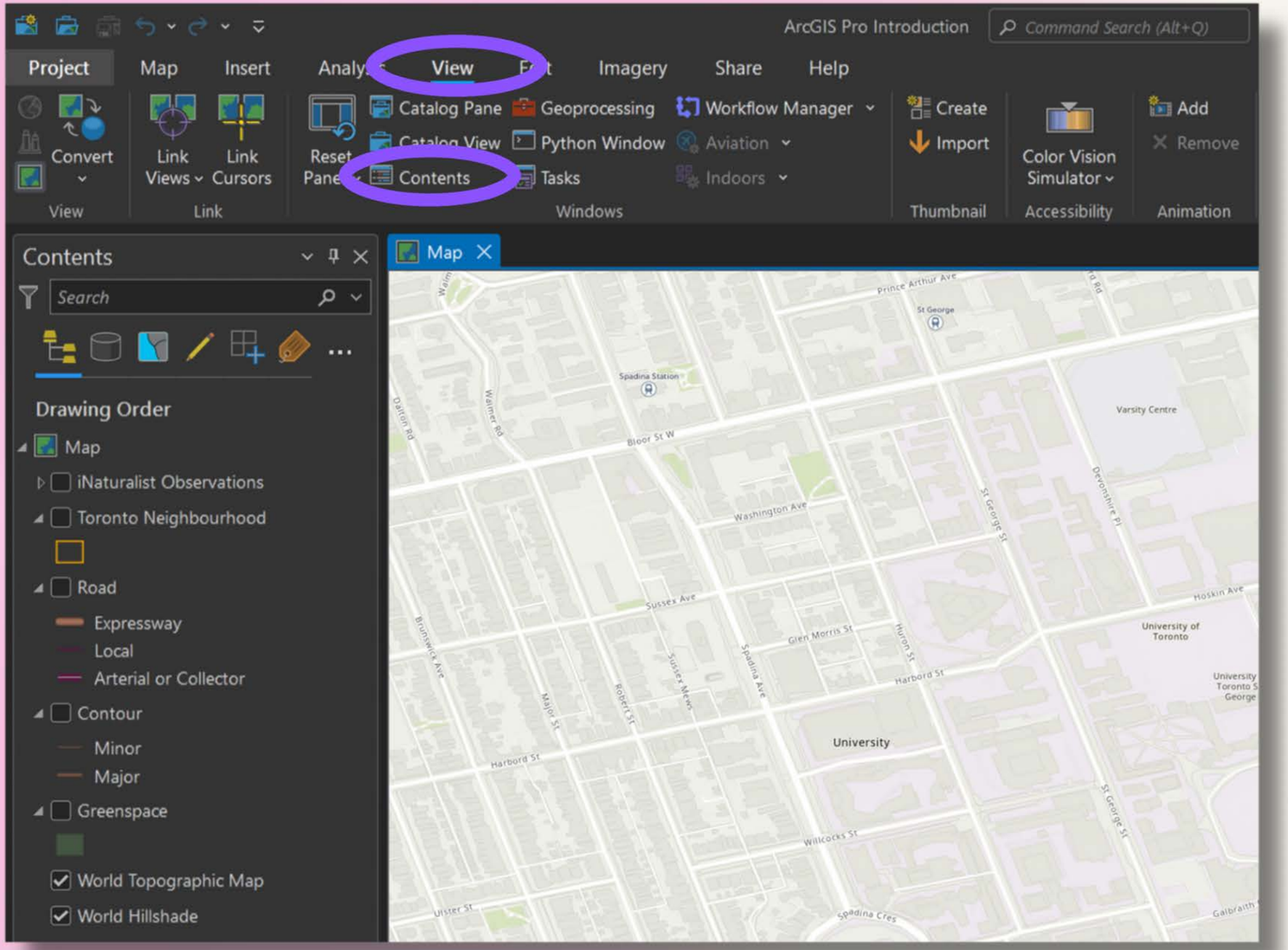
Groups



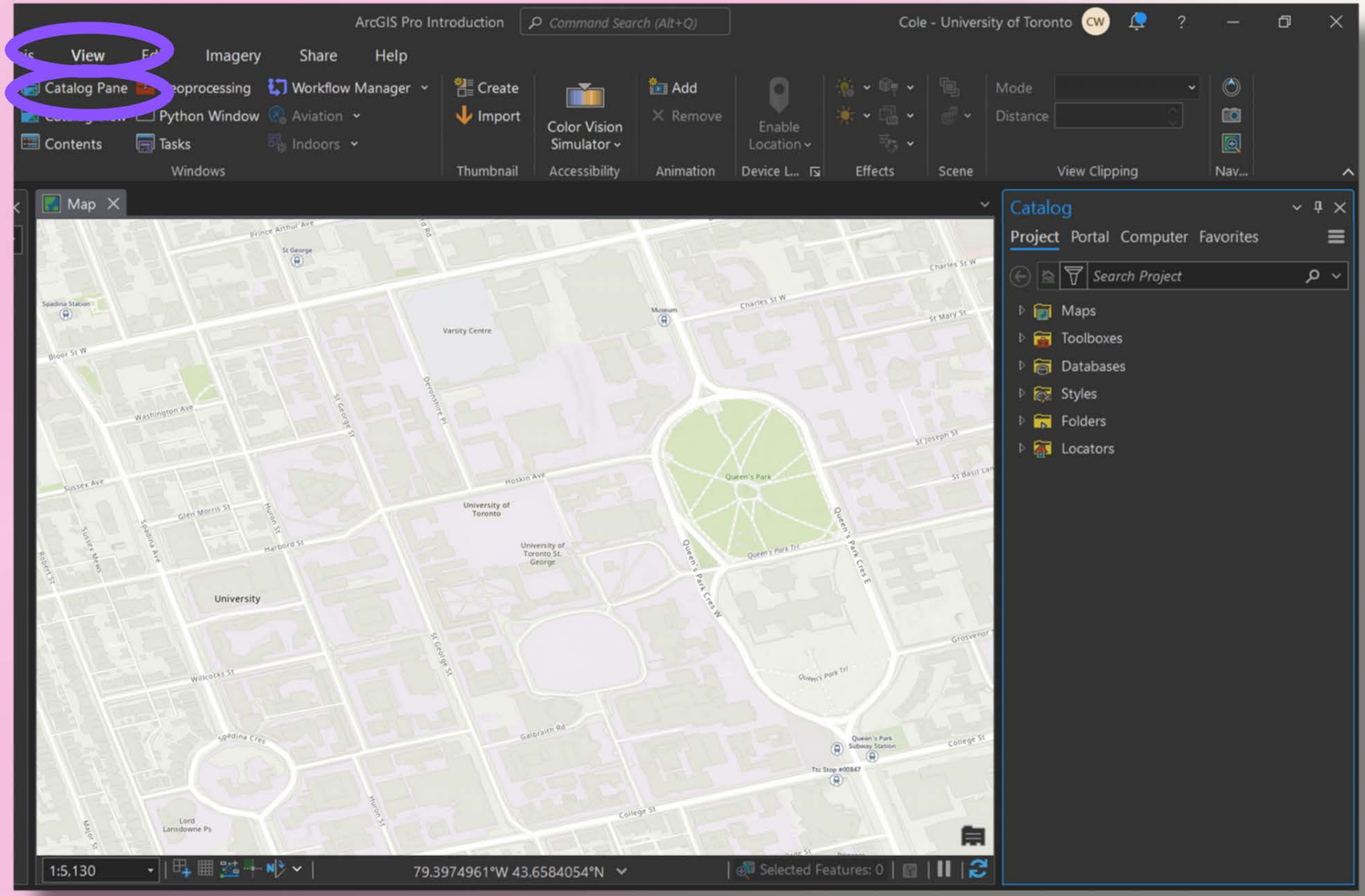
The Pro User Interface



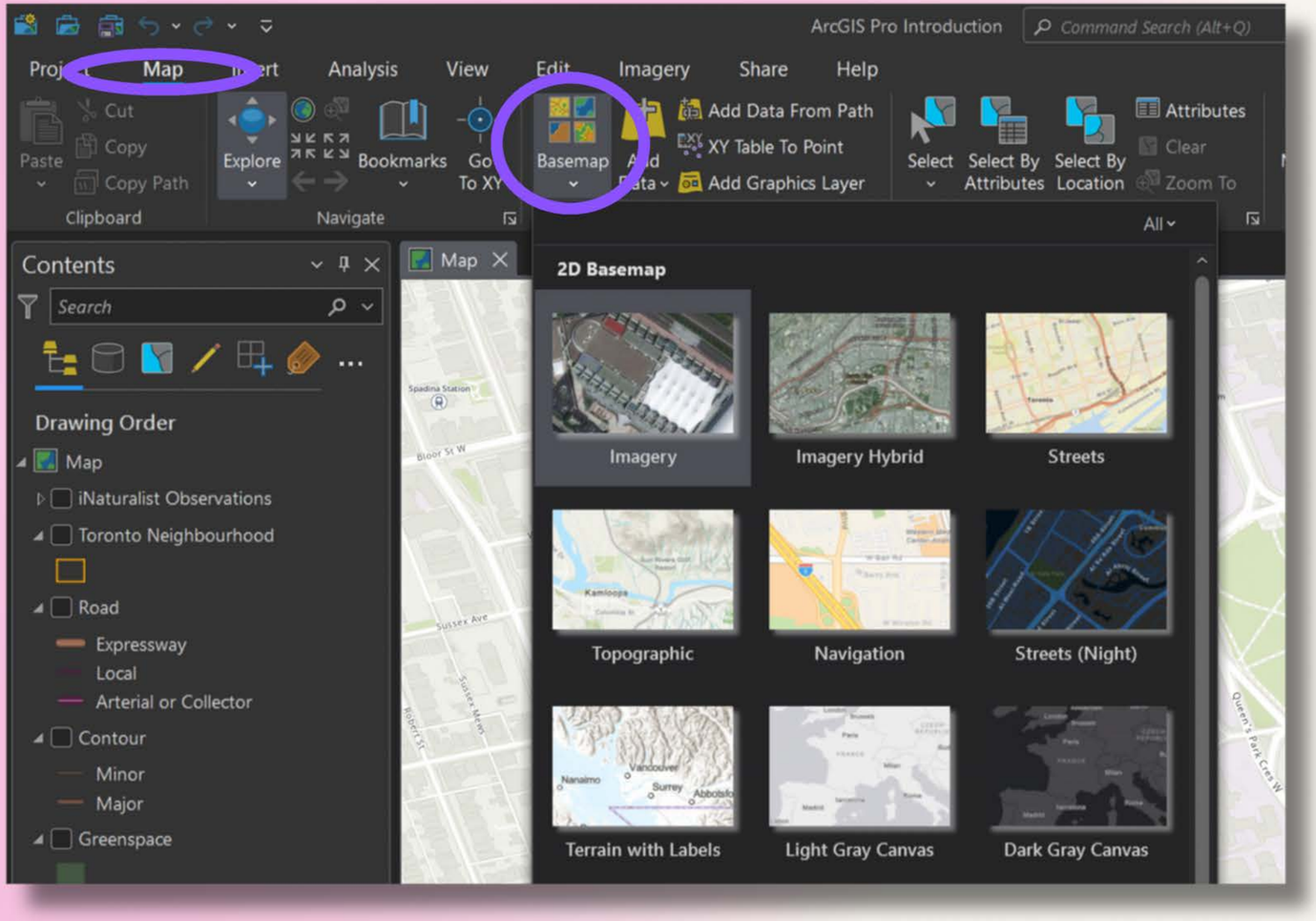
- From the **View** tab, click the **Contents** button



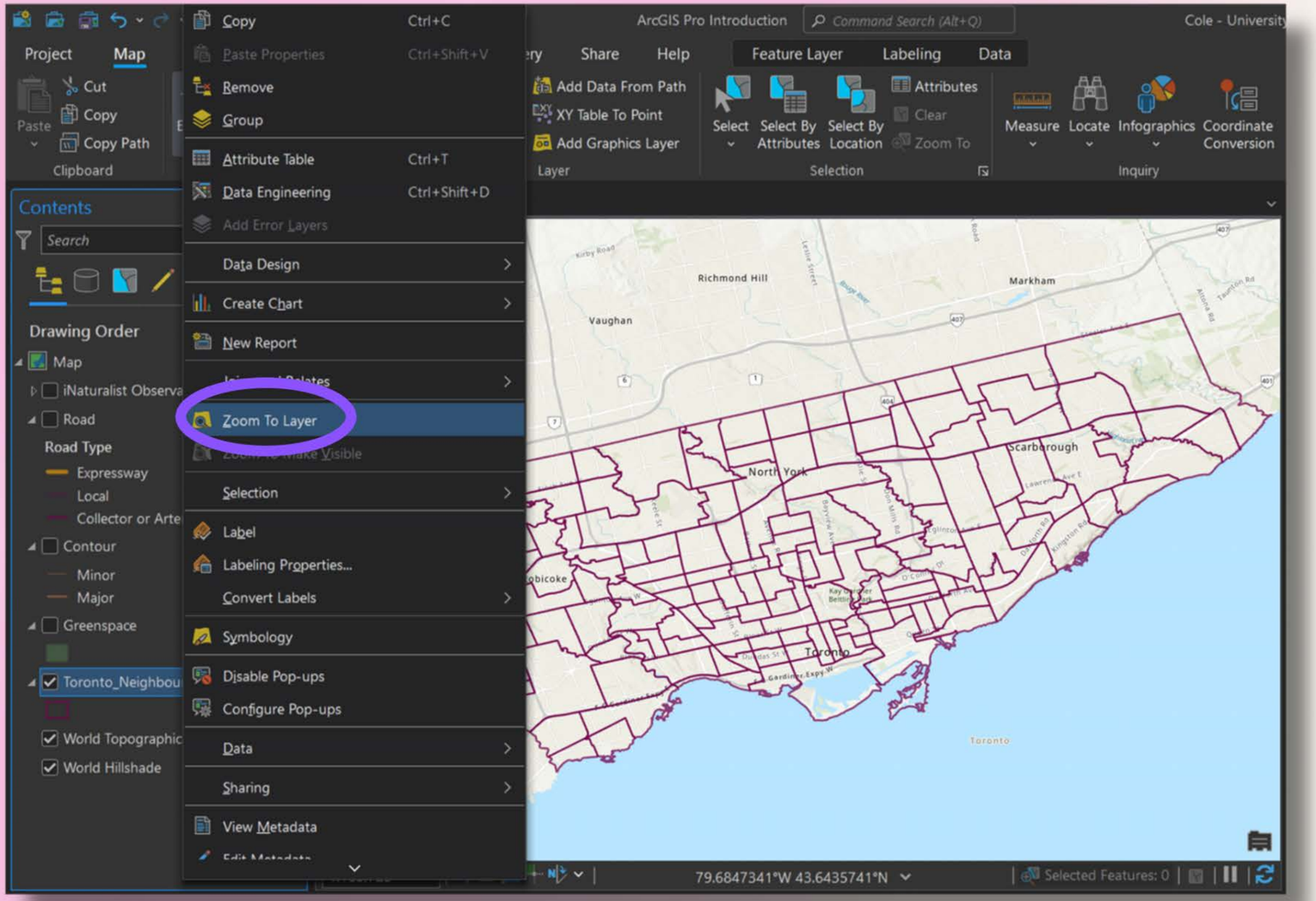
- From the **View** tab, click the **Catalog Pane** button



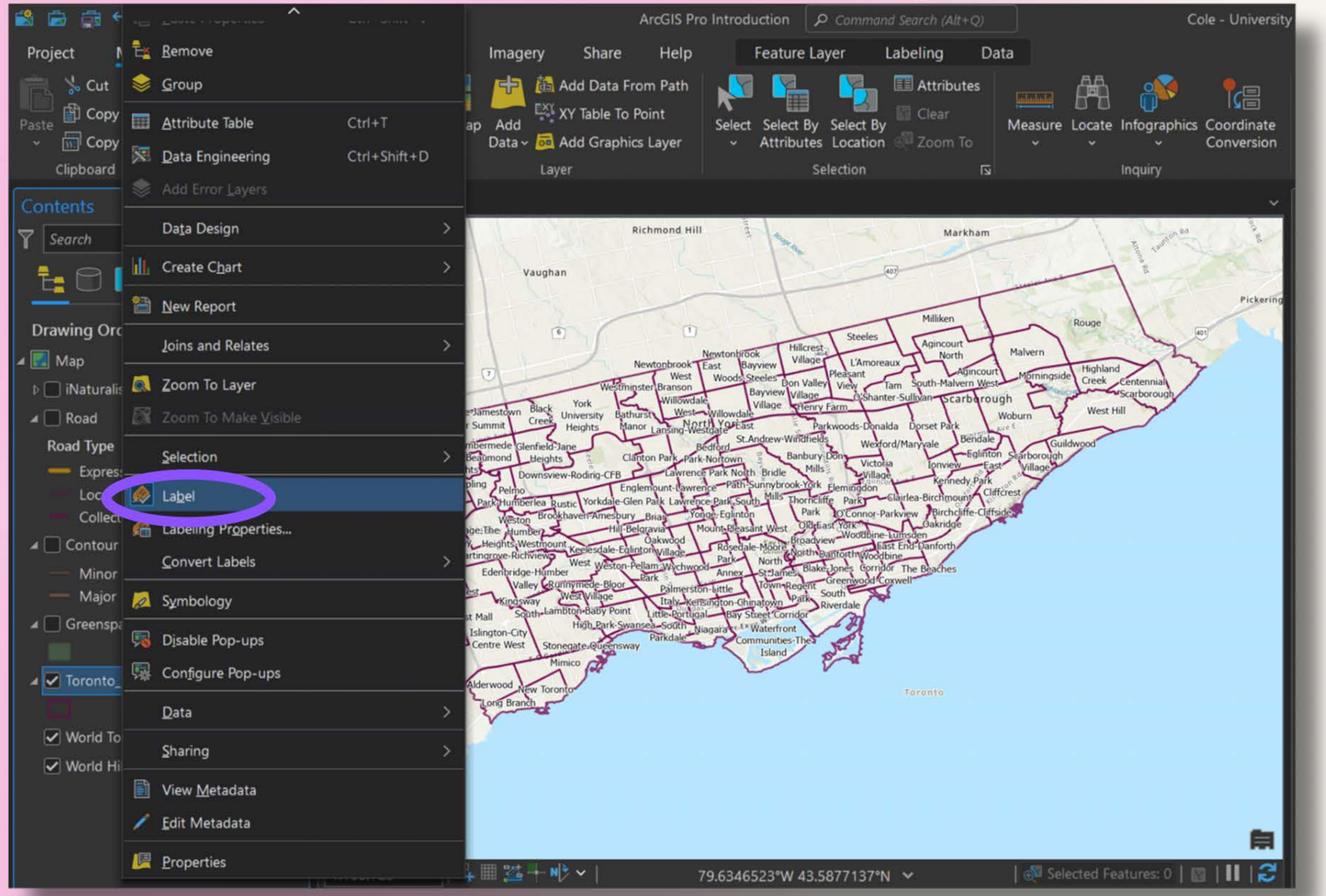
- From the **Map** tab, click the **Basemap** button.
- Review the various available basemaps.



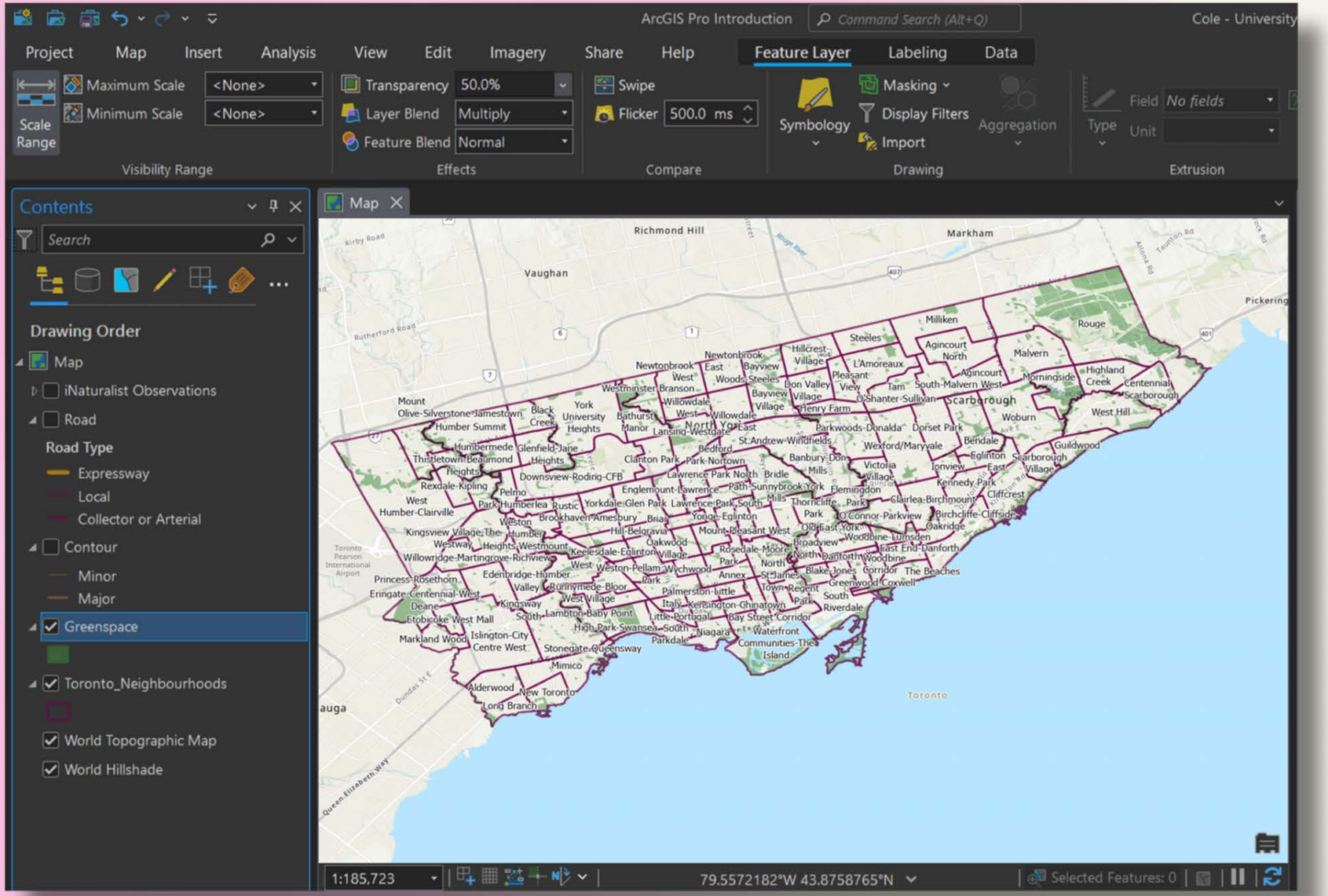
- Turn on the **Toronto Neighbourhood** layer
- Right-click the layer name and choose **Zoom to Layer**



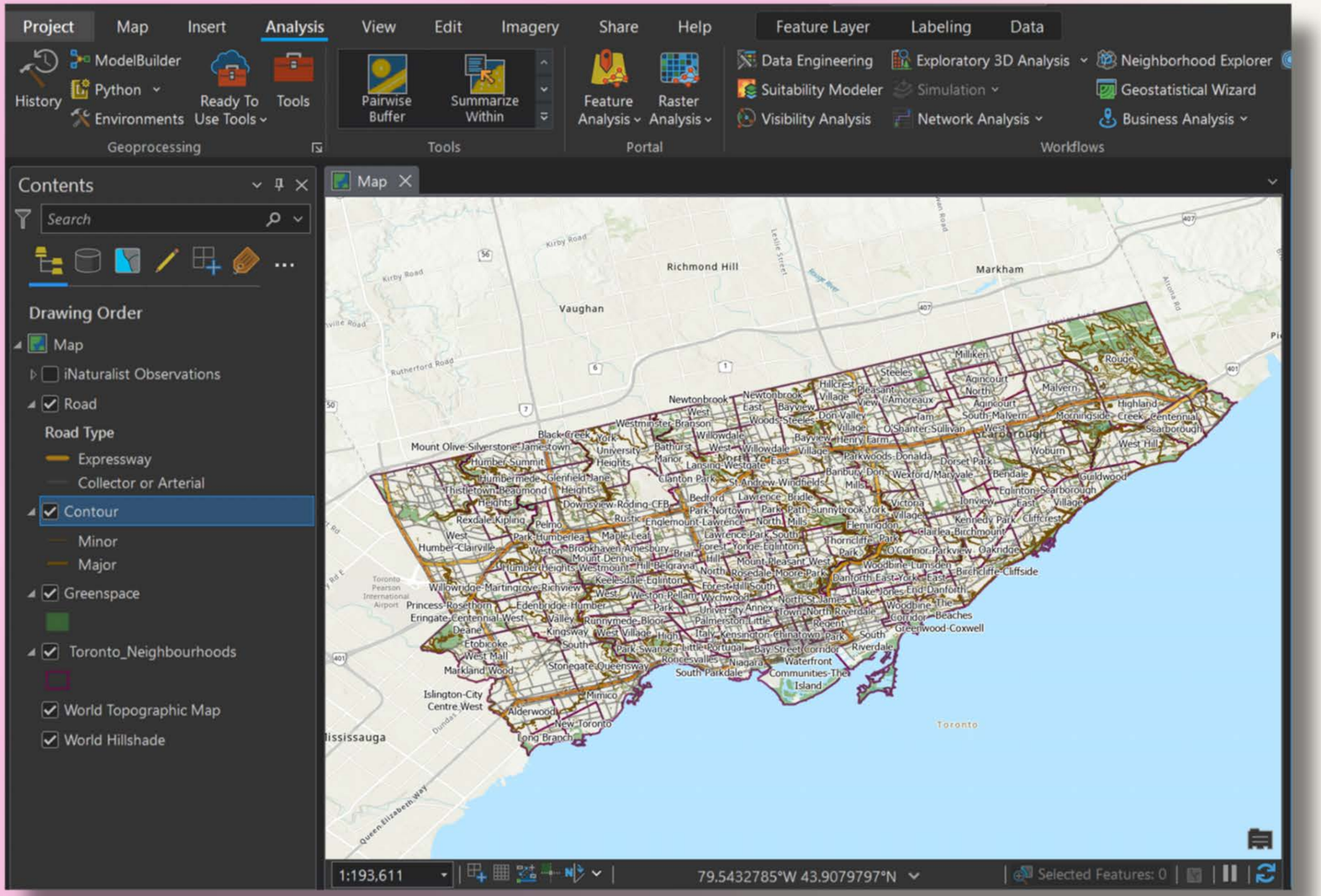
- Right-click the **Toronto Neighbourhood** layer in the Contents Pane
- Click the **Label** menu item to enable labeling



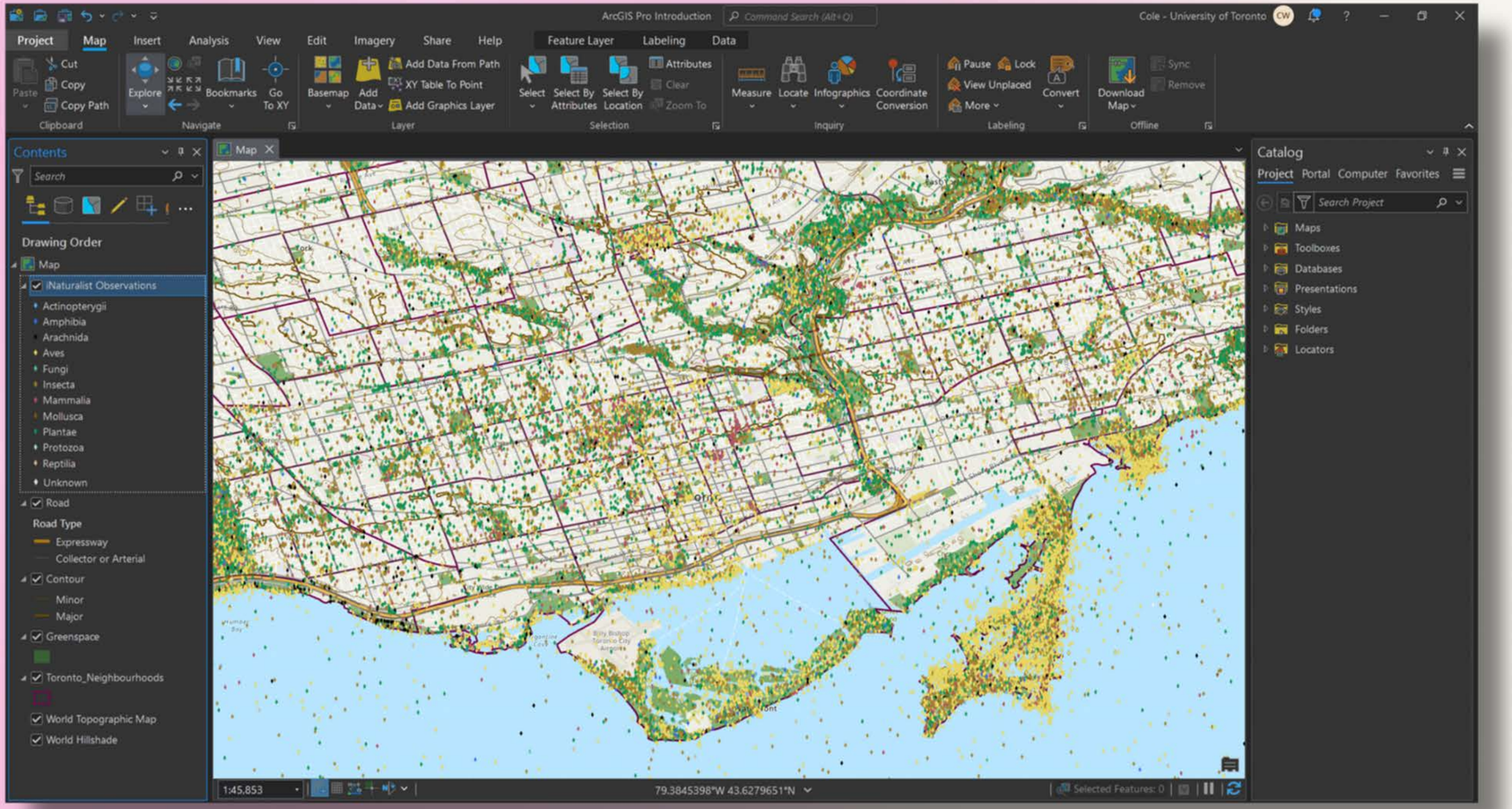
- Turn on the **Greenspace** layer



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



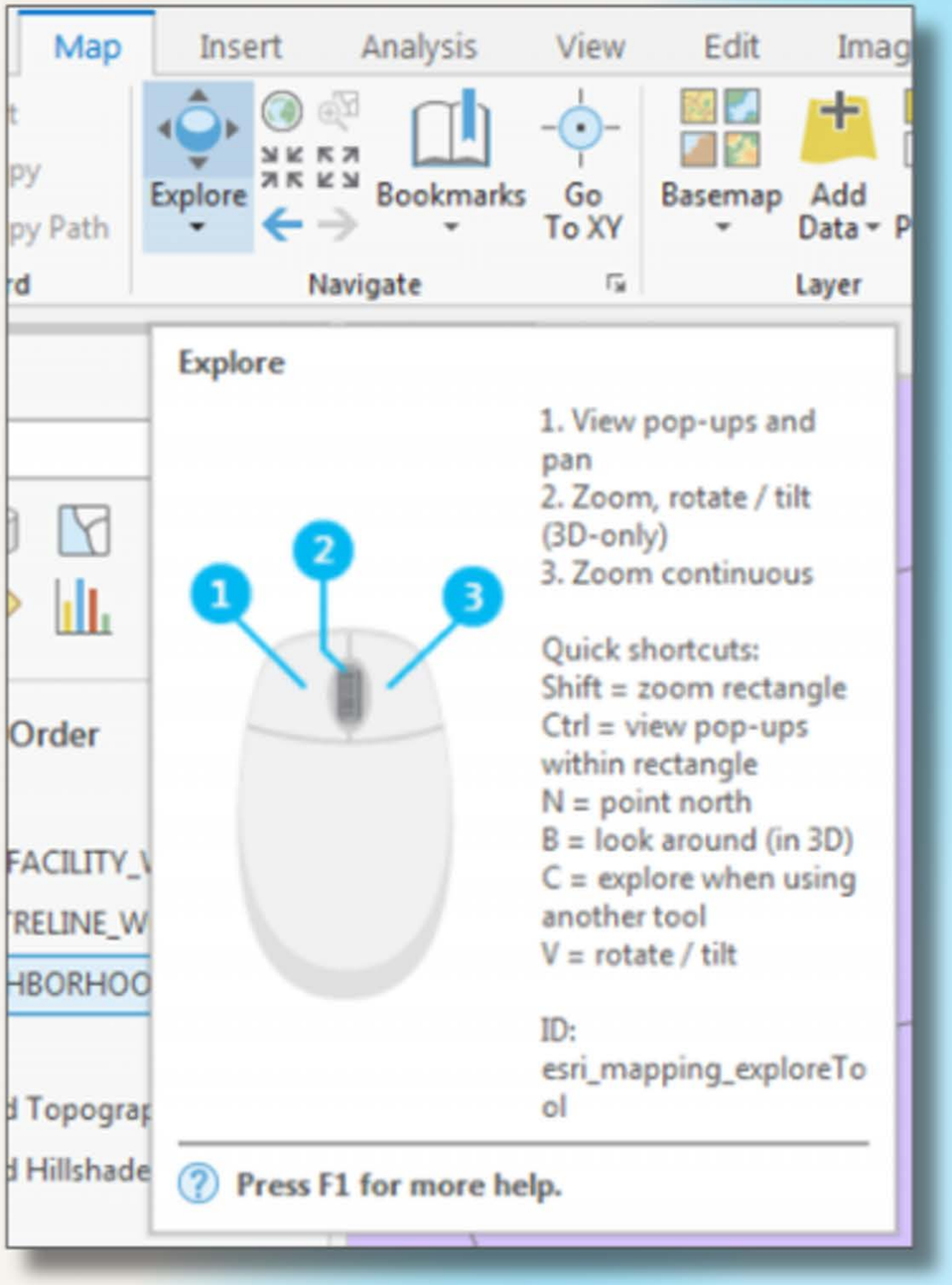
- Turn on the **iNaturalist Observations** layer
  - *iNaturalist is a social network for sharing and identifying biodiversity observations. Esri has made this data available as a web service.*



Navigation

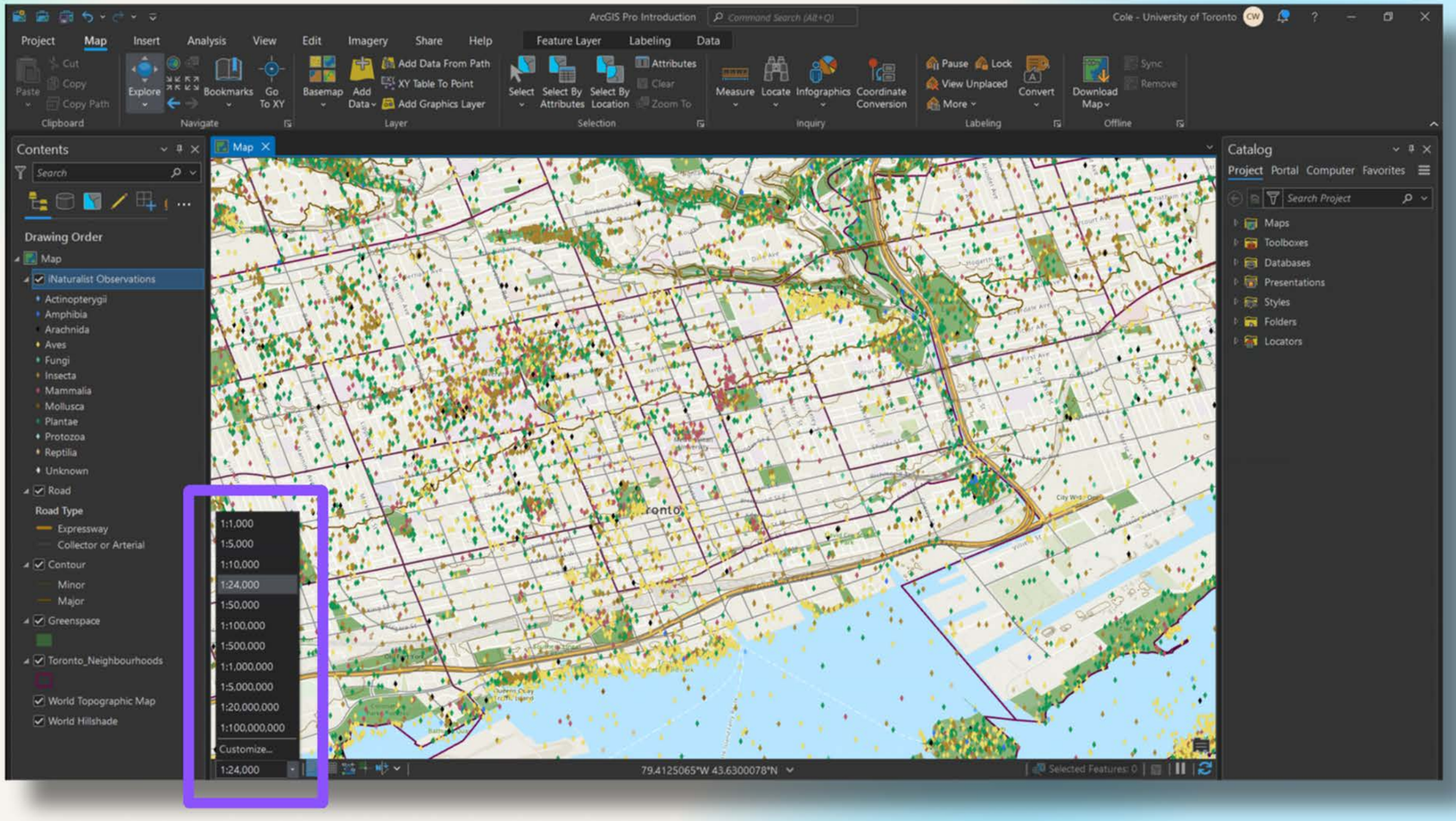
- Using the mouse buttons and wheel, navigate around your map.

- To reposition the view on your Toronto data, right-click the Neighbourhoods layer and select **Zoom to Layer**.



Scale

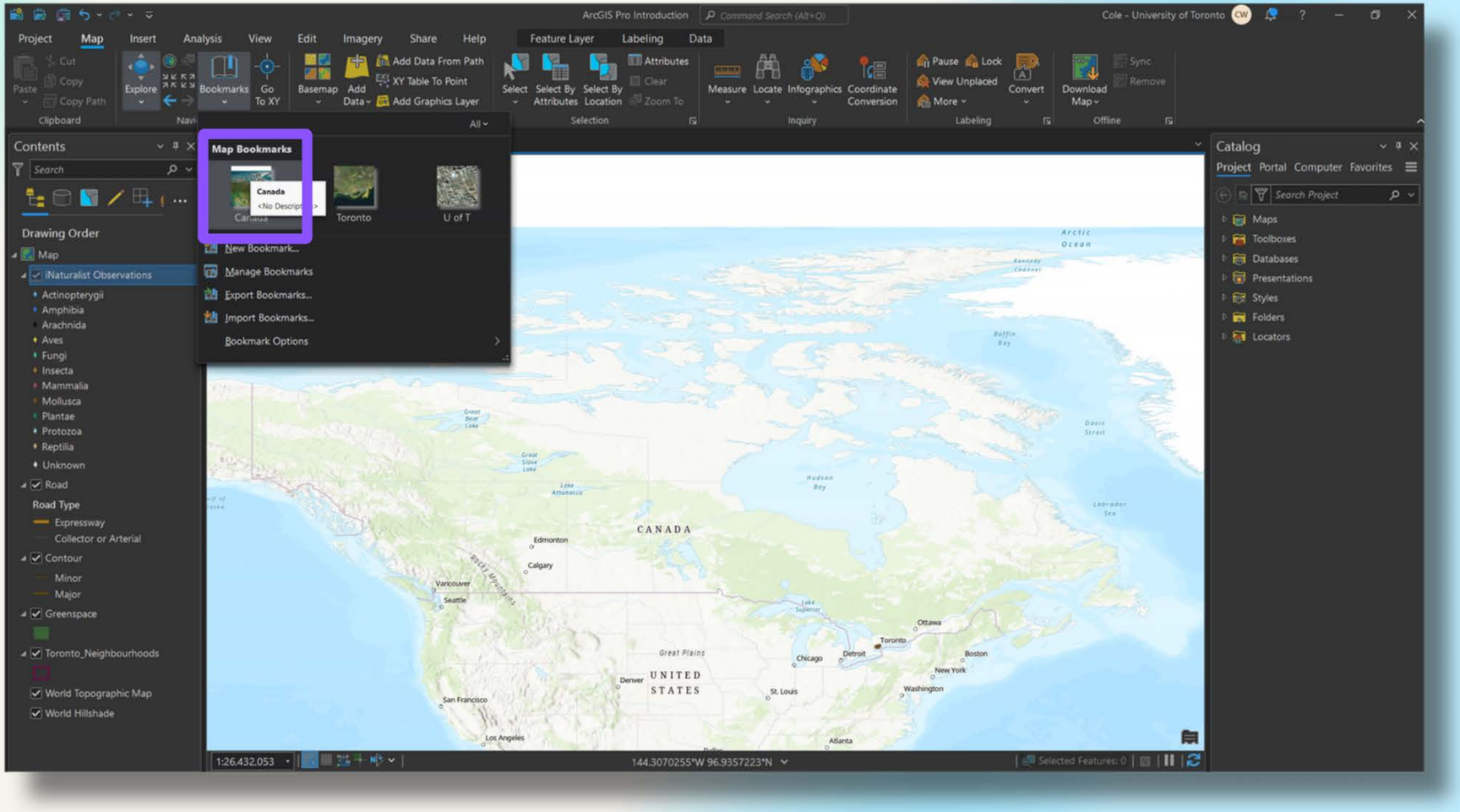
- Various map scales may be selected from the dropdown at the bottom left of the map area.



Bookmarks

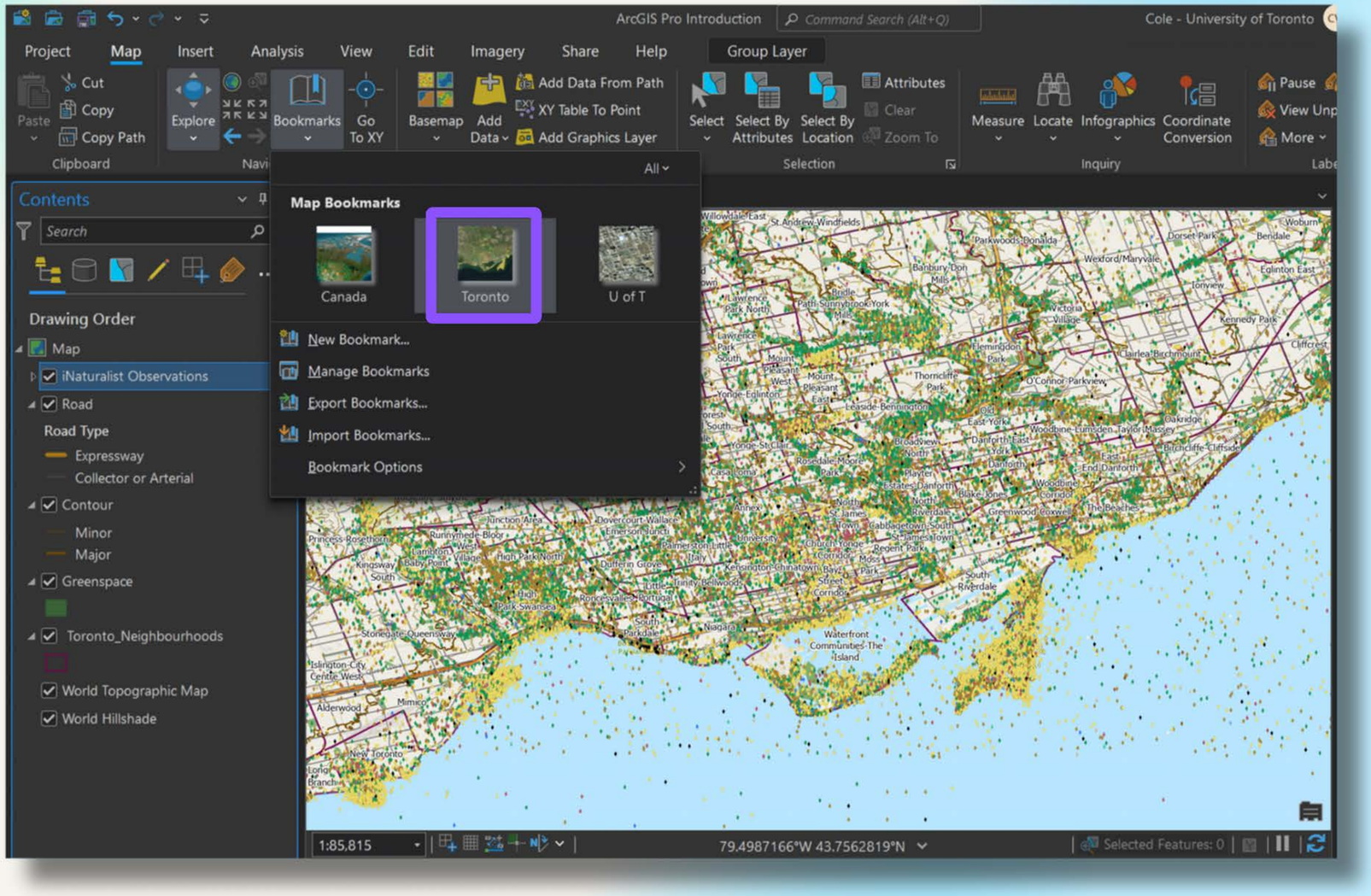
Bookmarks are navigation shortcuts to positions on a map.

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



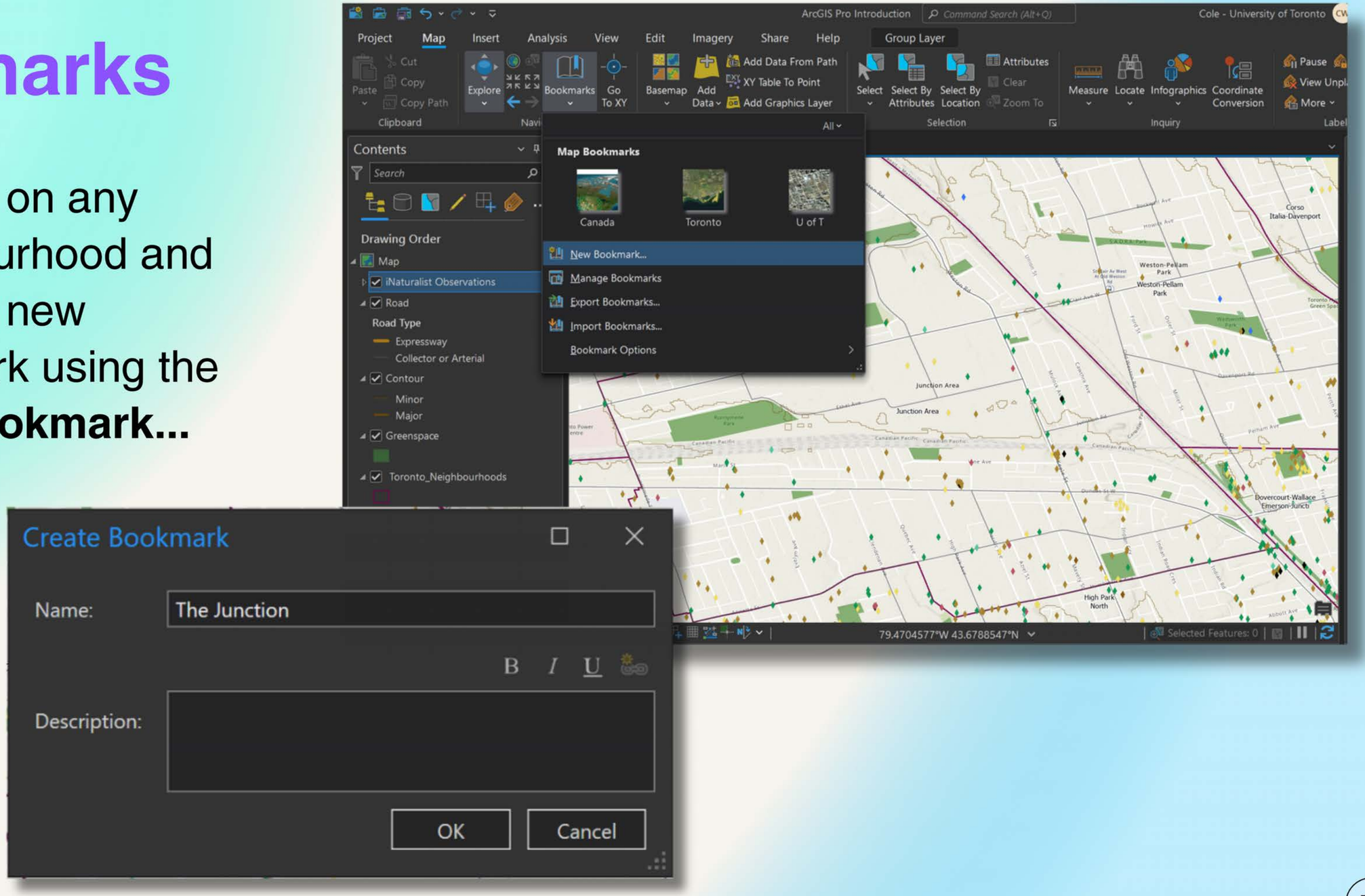
Bookmarks

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



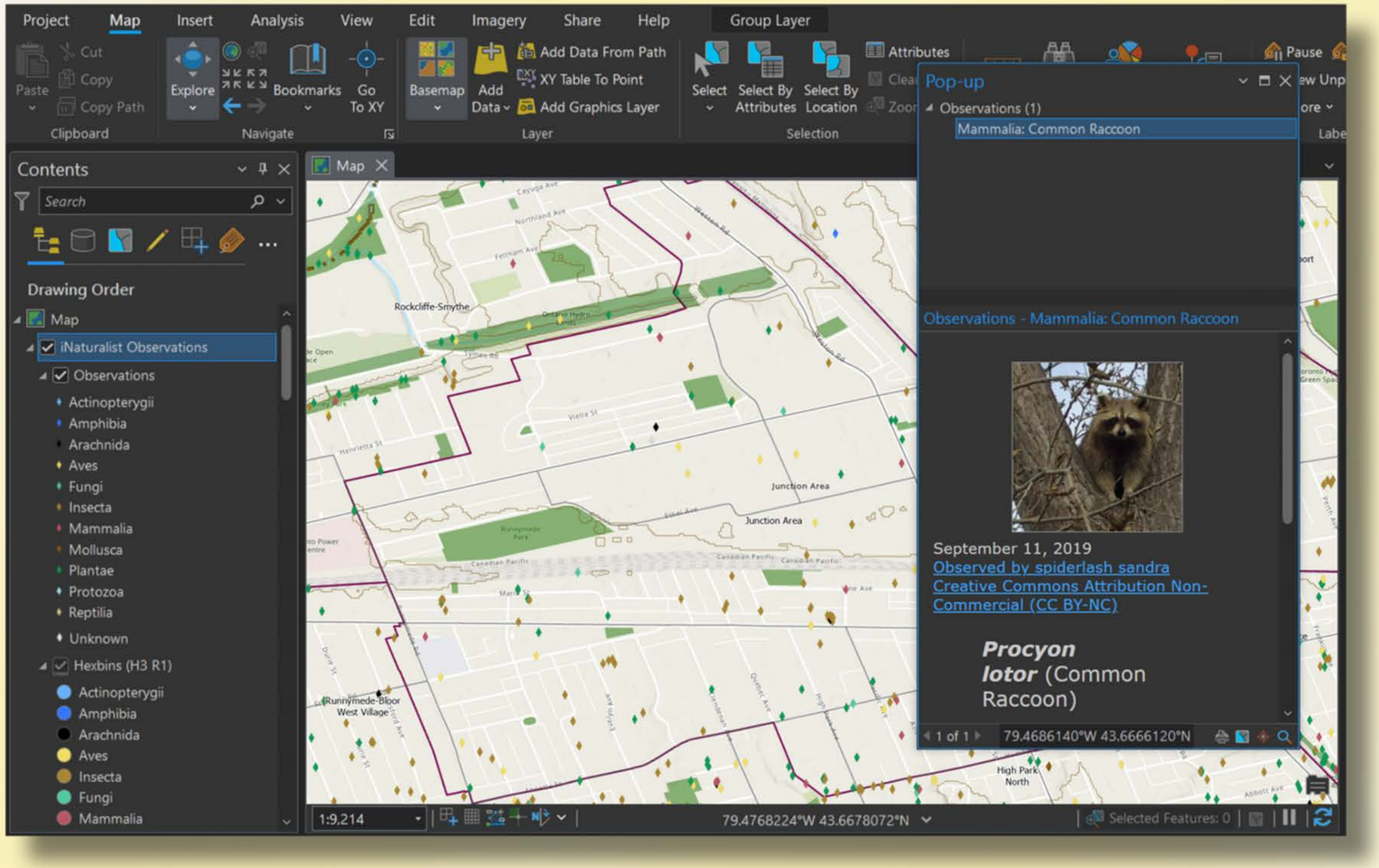
Bookmarks

- 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**.

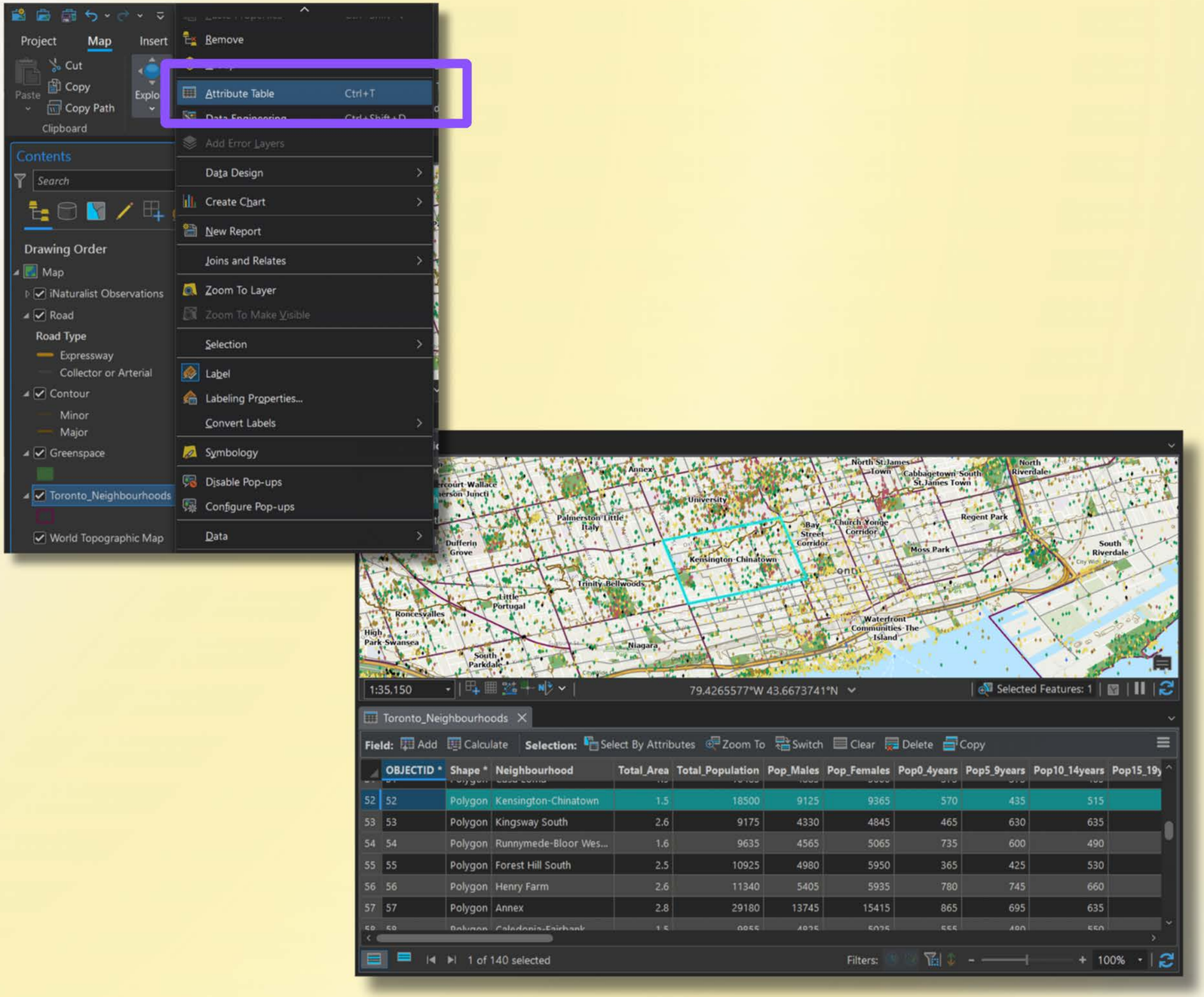


Exploring Data

- Right-click the **Neighbourhoods** layer and choose **Attribute Table** (or press Ctrl + t).

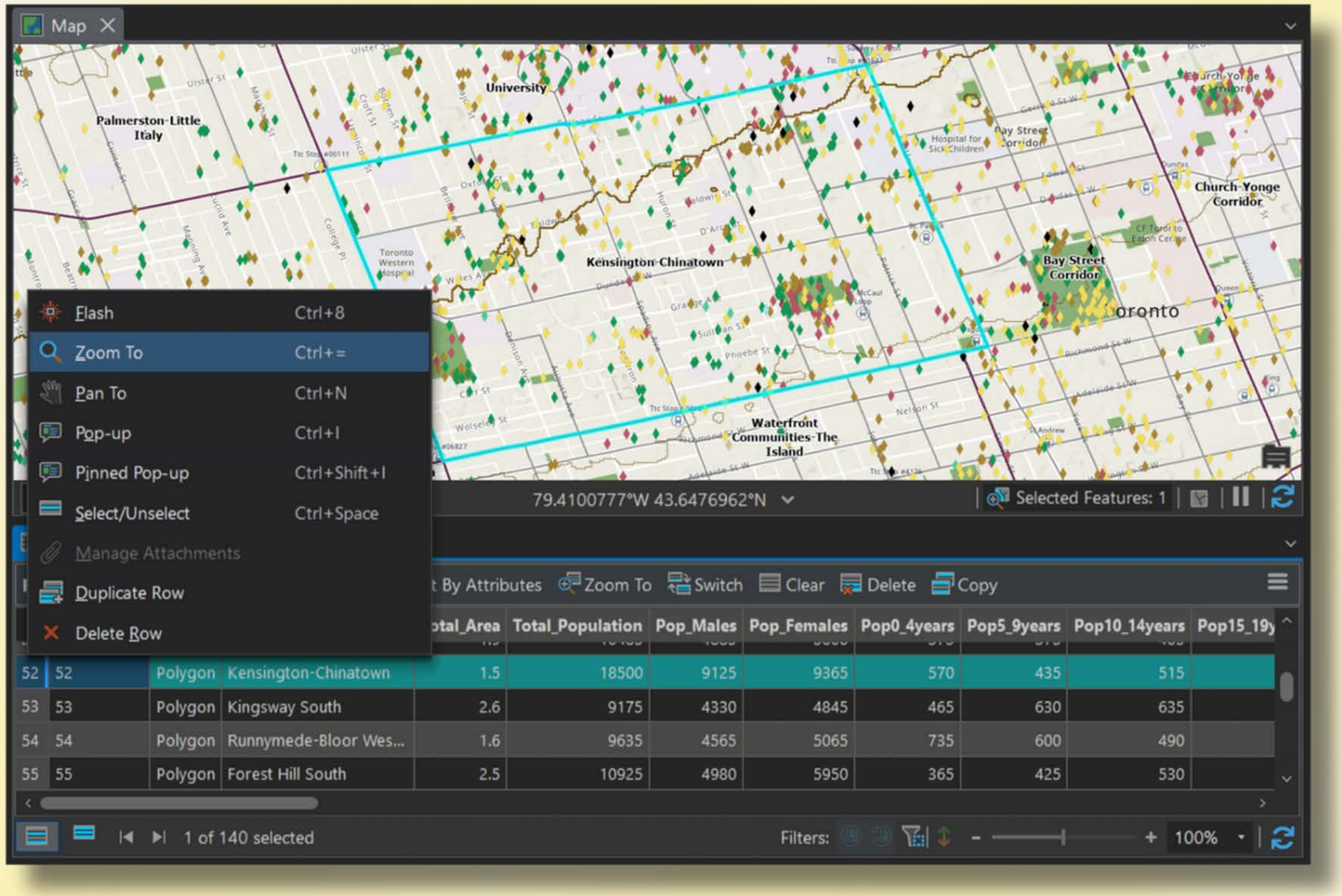
- Click on any record within the table.

- Note that the highlighted row corresponds to the highlighted map polygon.



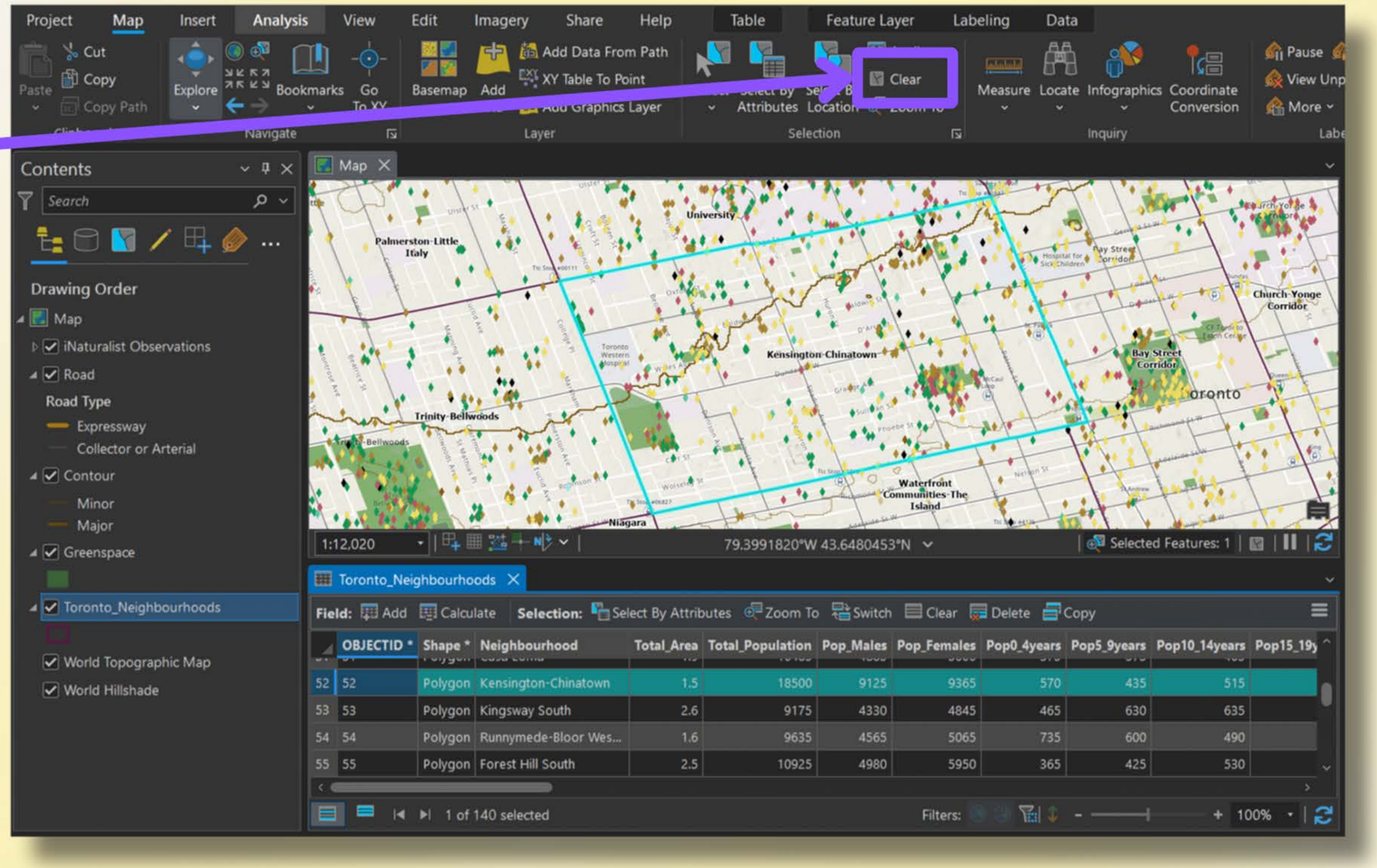
Exploring Data

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



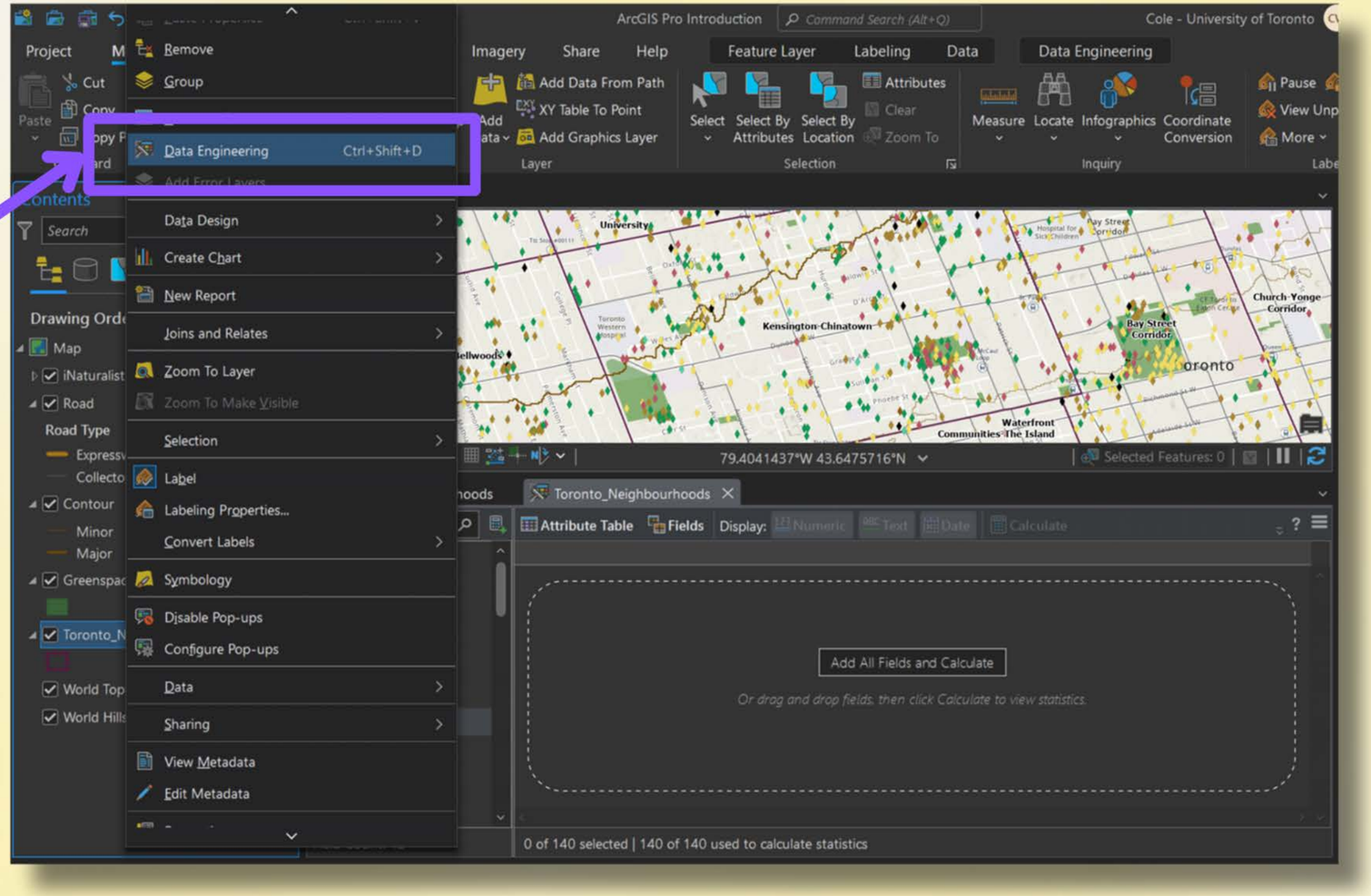
Exploring Data

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



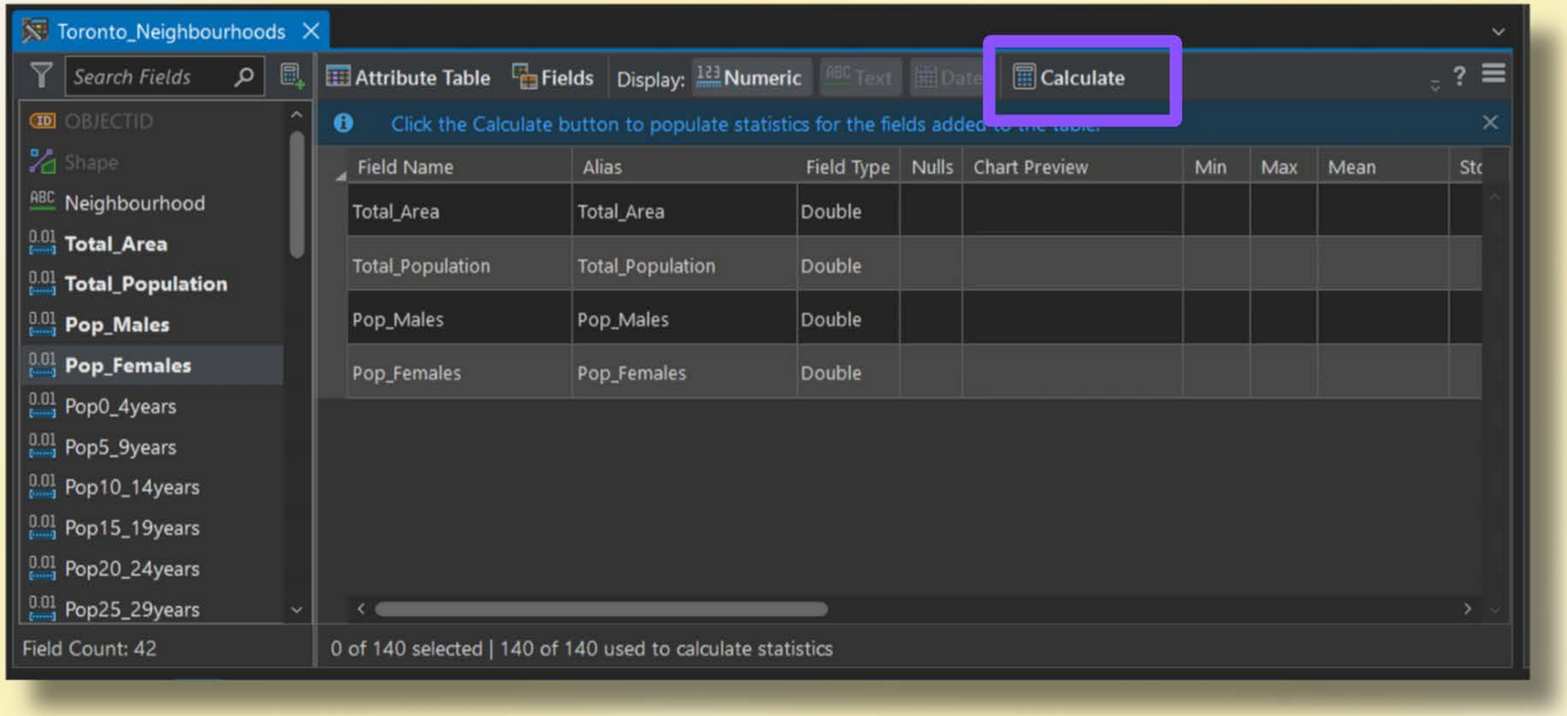
Exploring Data

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



Exploring Data

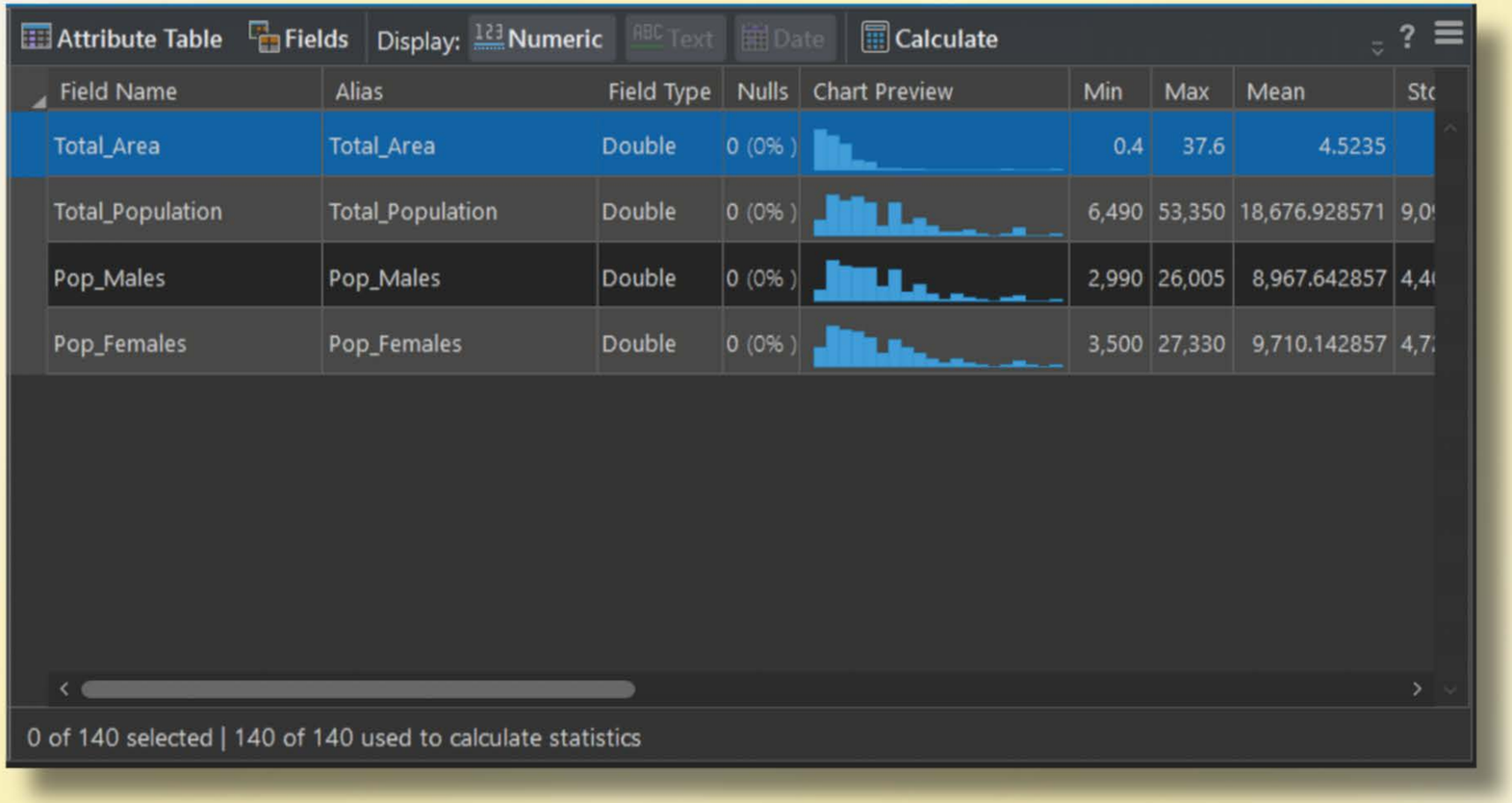
- In the Data Engineering pane, drag the **Total_Area**, **Total_Population**, **Pop_Males**, and **Pop_Females** fields into the Data Engineering view.
- Click **Calculate**.



Exploring Data

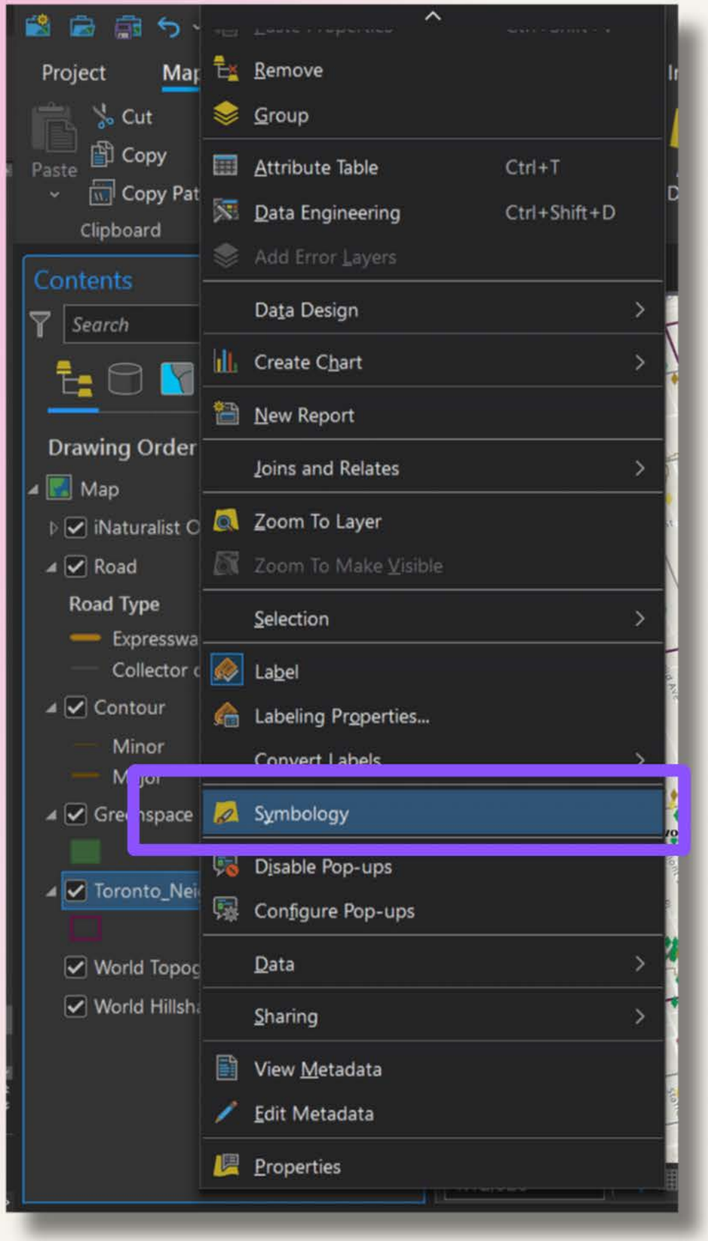
- Review the statistics that have been generated for this dataset.

- Data Engineering allows you to get an overview of your data, as well as look for outliers, missing values, and other issues.



Symbolizing Data

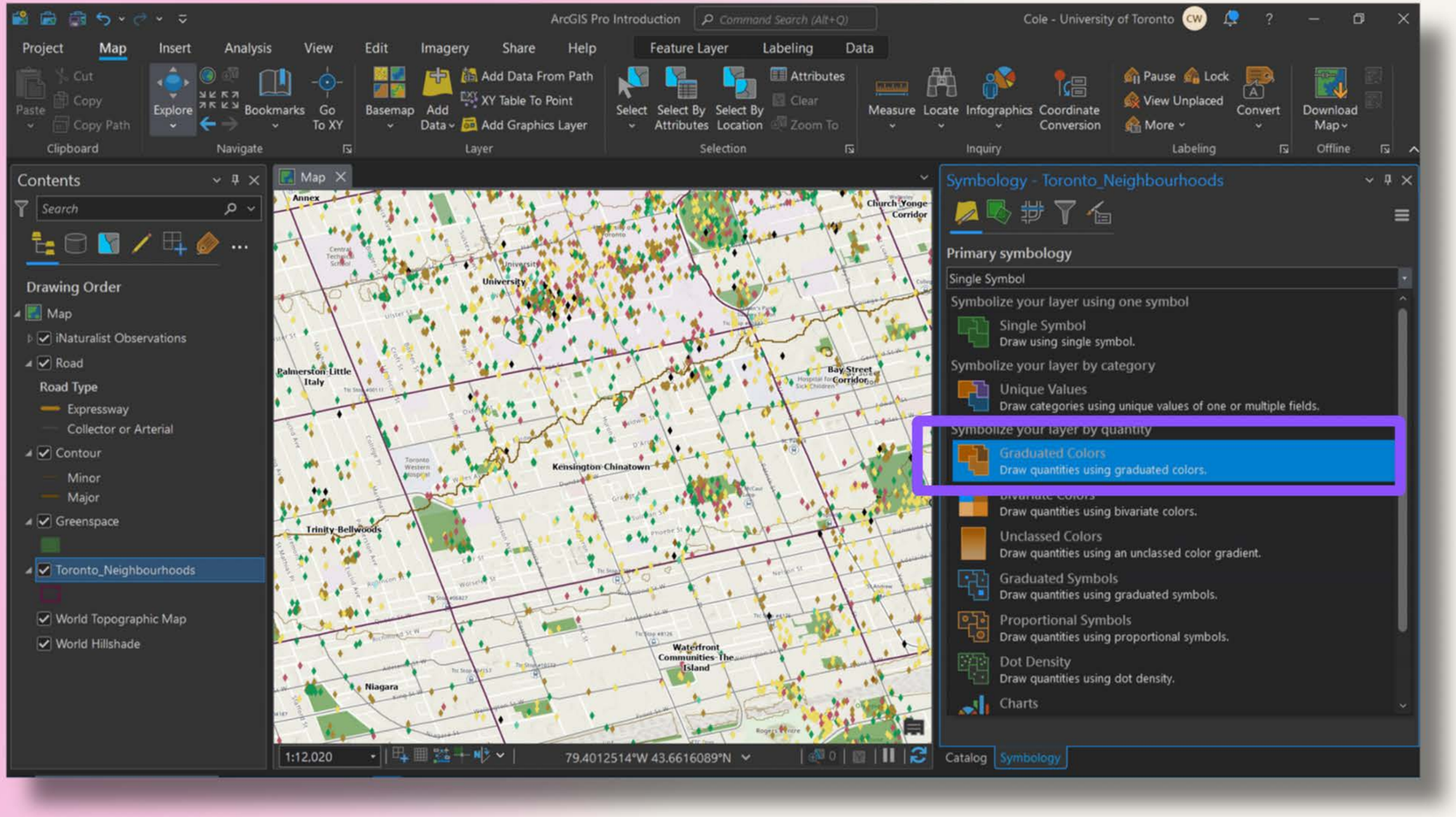
- Right-click the **Neighbourhoods** layer and choose **Symbology**.



Symbolizing Data

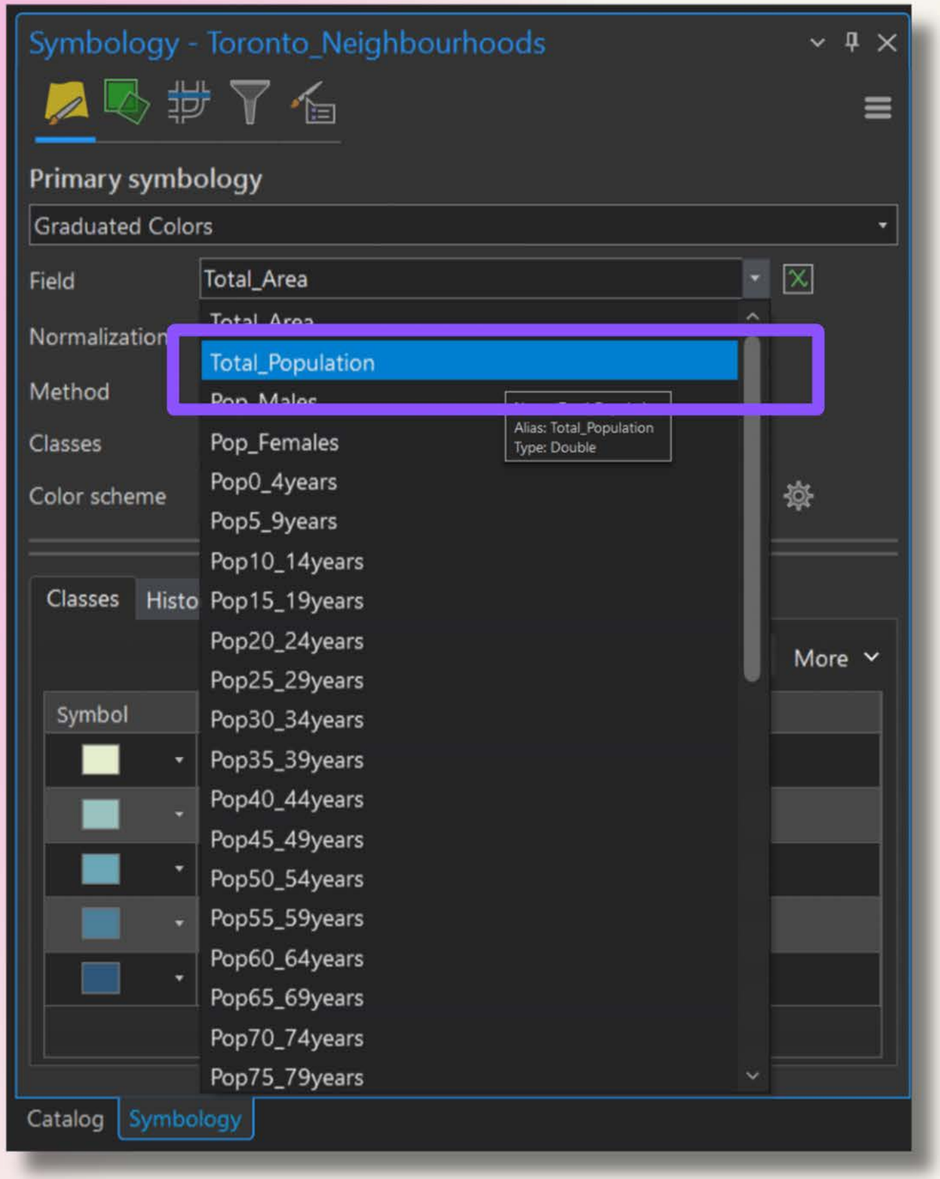
- The **Symbology Pane** will appear.

- From the **Primary Symbology** dropdown, select **Graduated Colors**.



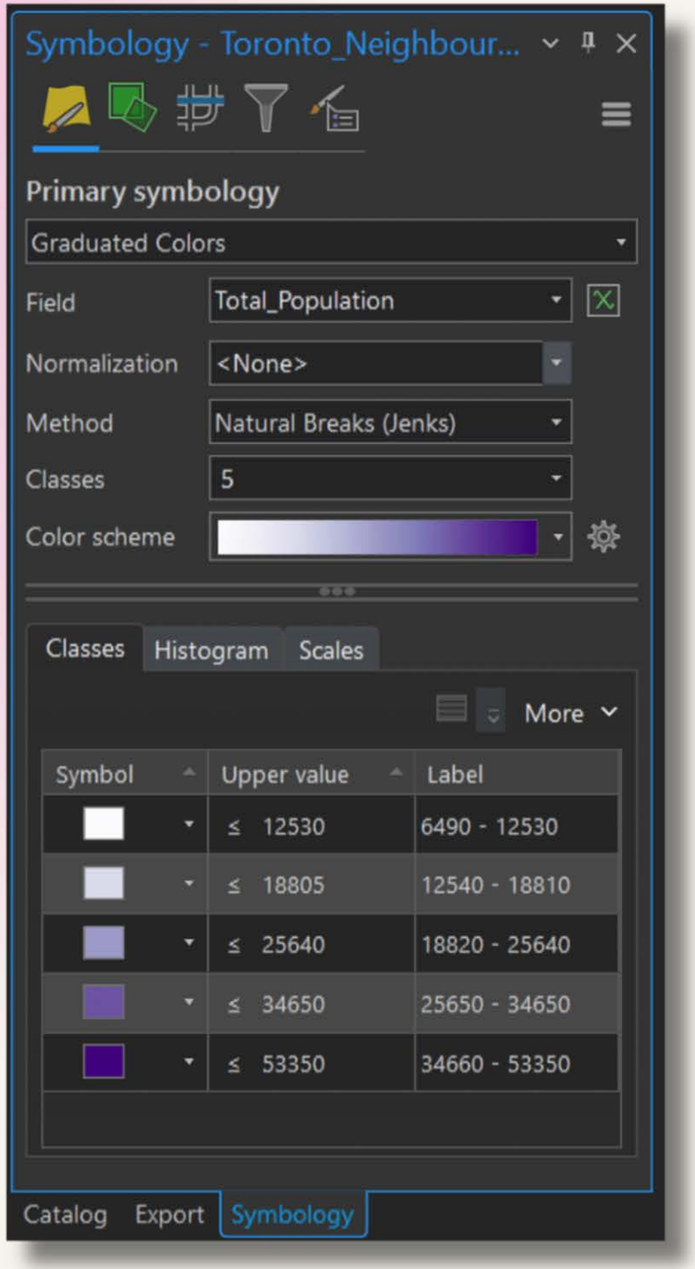
Symbolizing Data

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



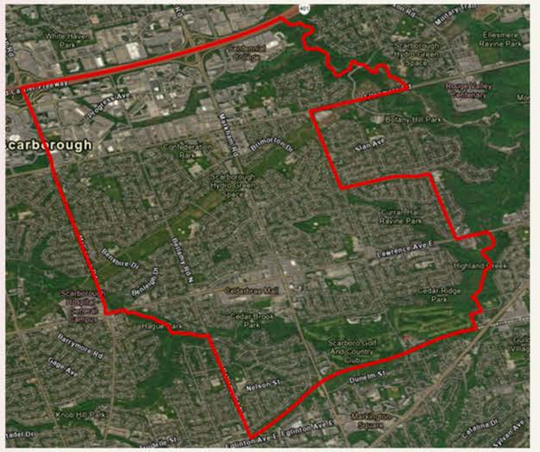
Symbolizing Data

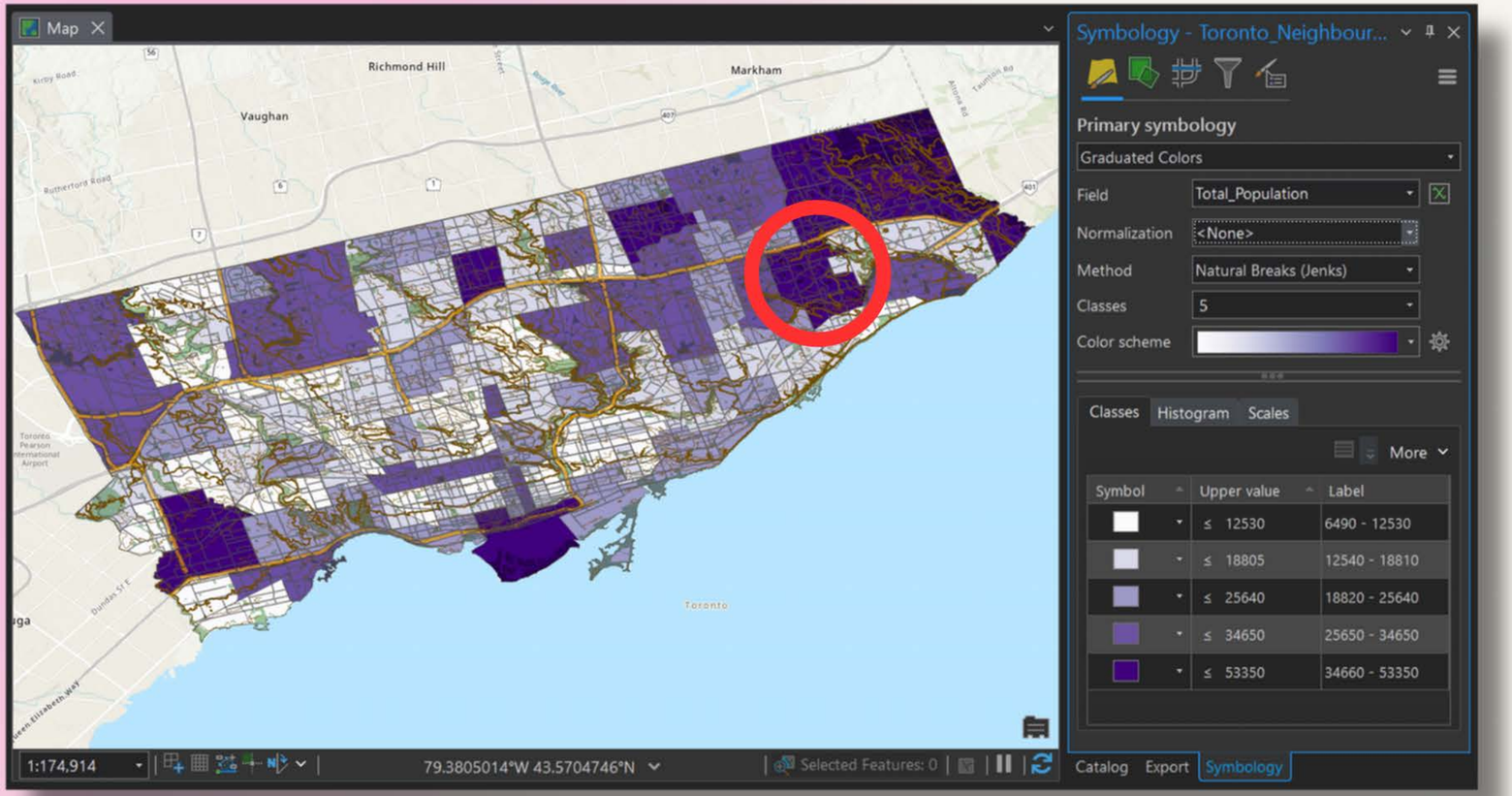
- Choose a colour scheme that begins with a lighter colour and ends with a darker or more saturated colour.



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.*

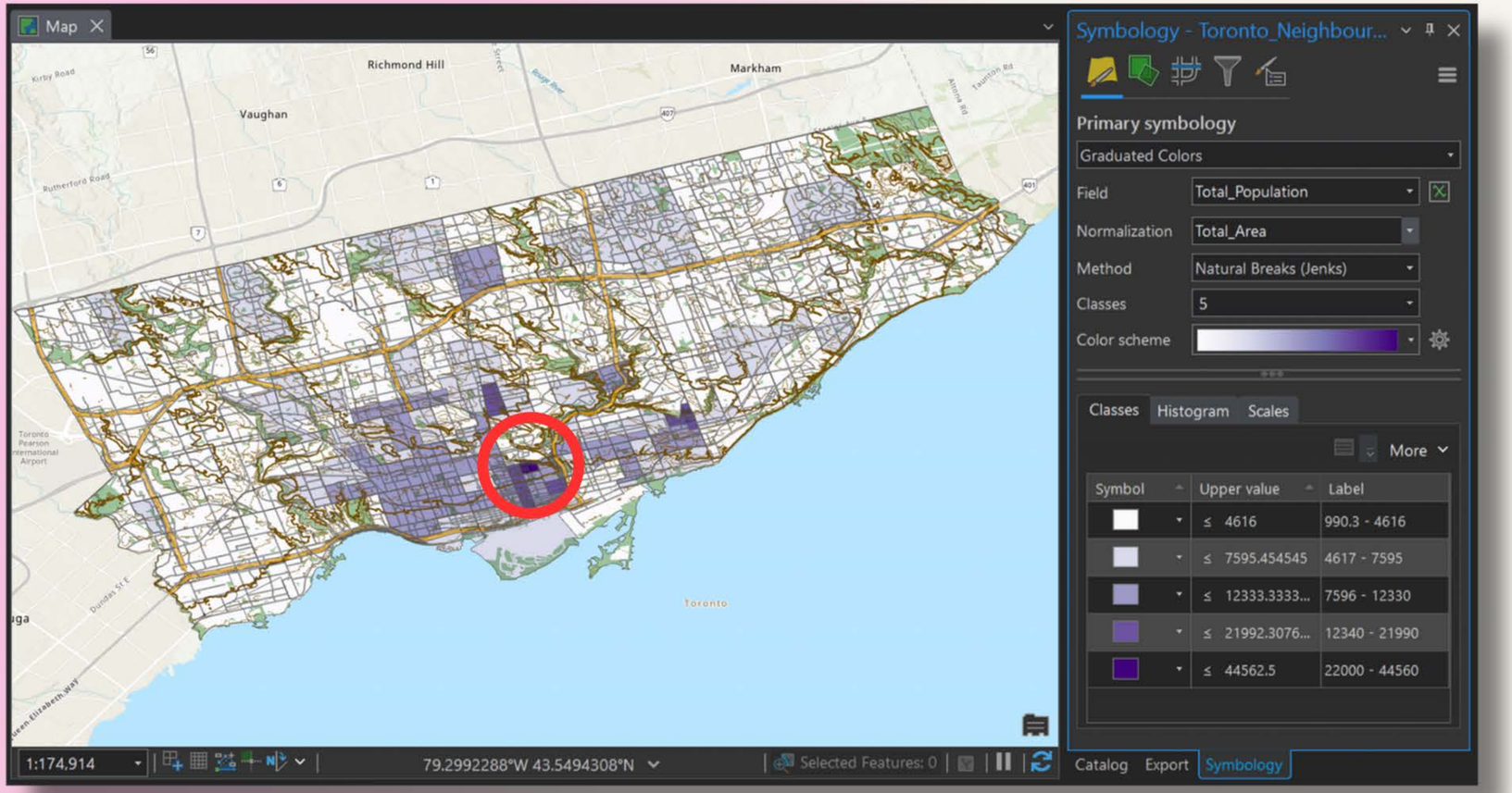




Symbolizing Data

- From the **Normalization** dropdown in the Symbology pane, select **Total_Area**

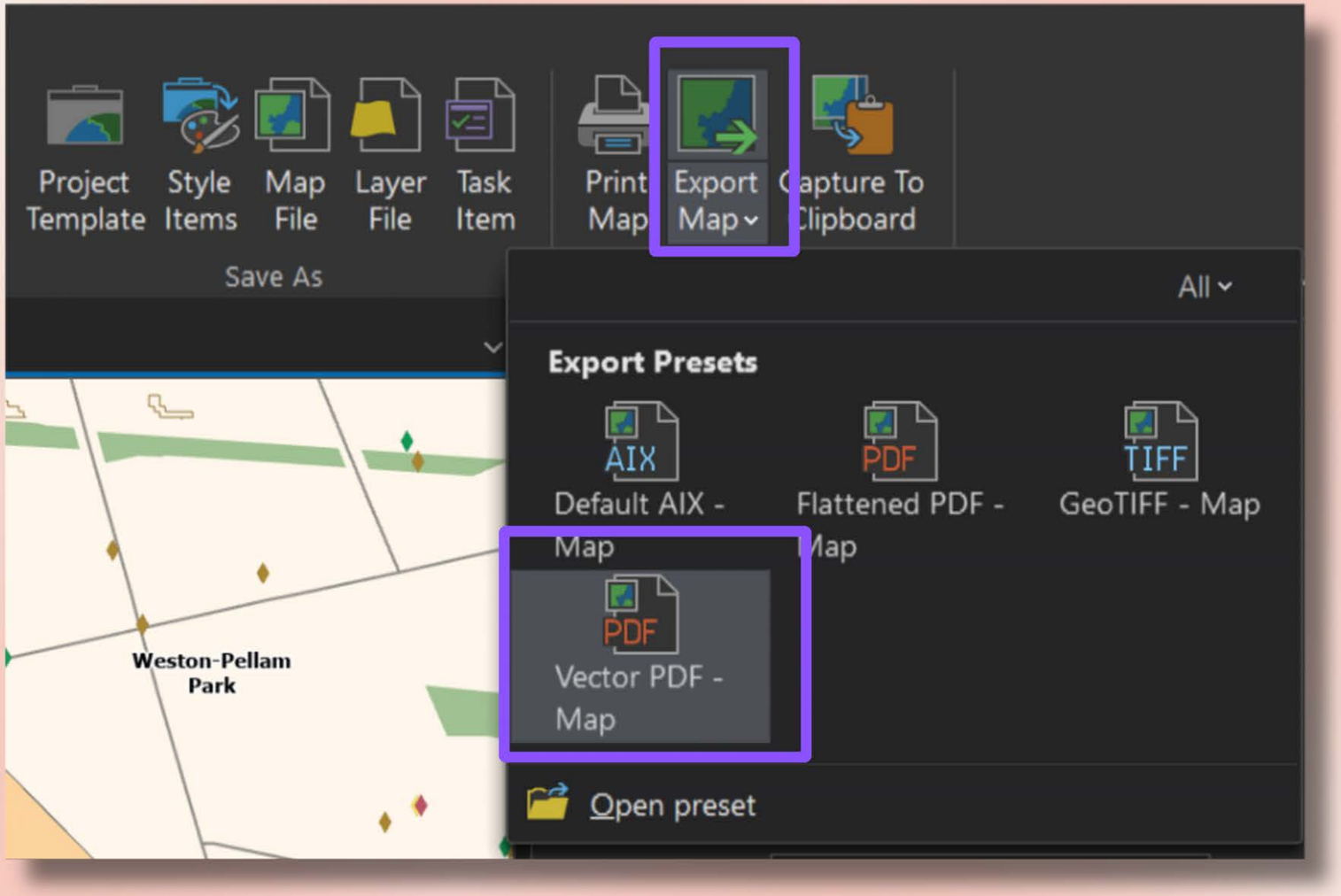
- The information is now expressed in terms of **population density** rather than raw counts.



Exporting a map

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

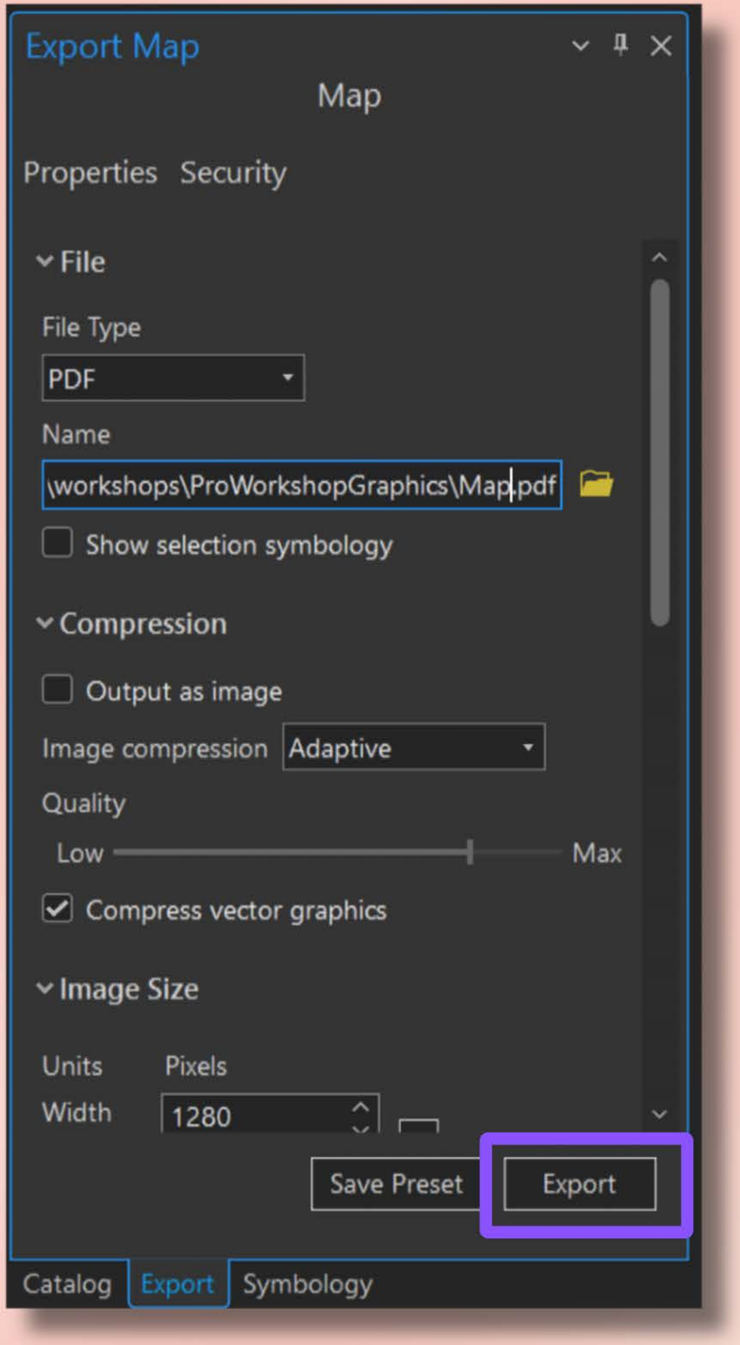
- Choose **Vector PDF**.



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.

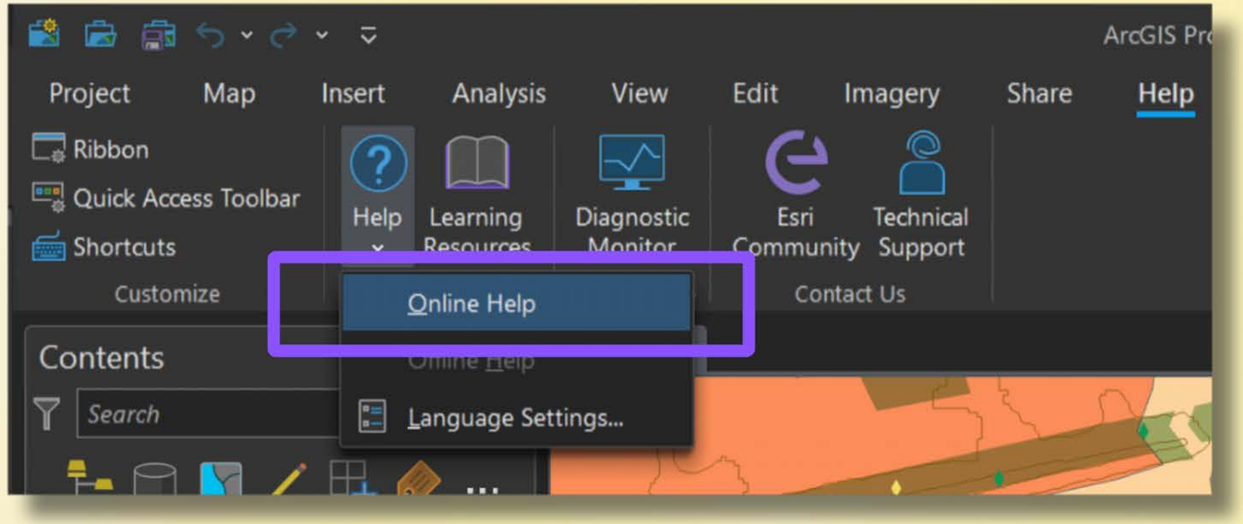
- See https://pro.arcgis.com/en/pro-app/latest/get-started/arcgis-pro-keyboard-shortcuts.htm for a more complete list.

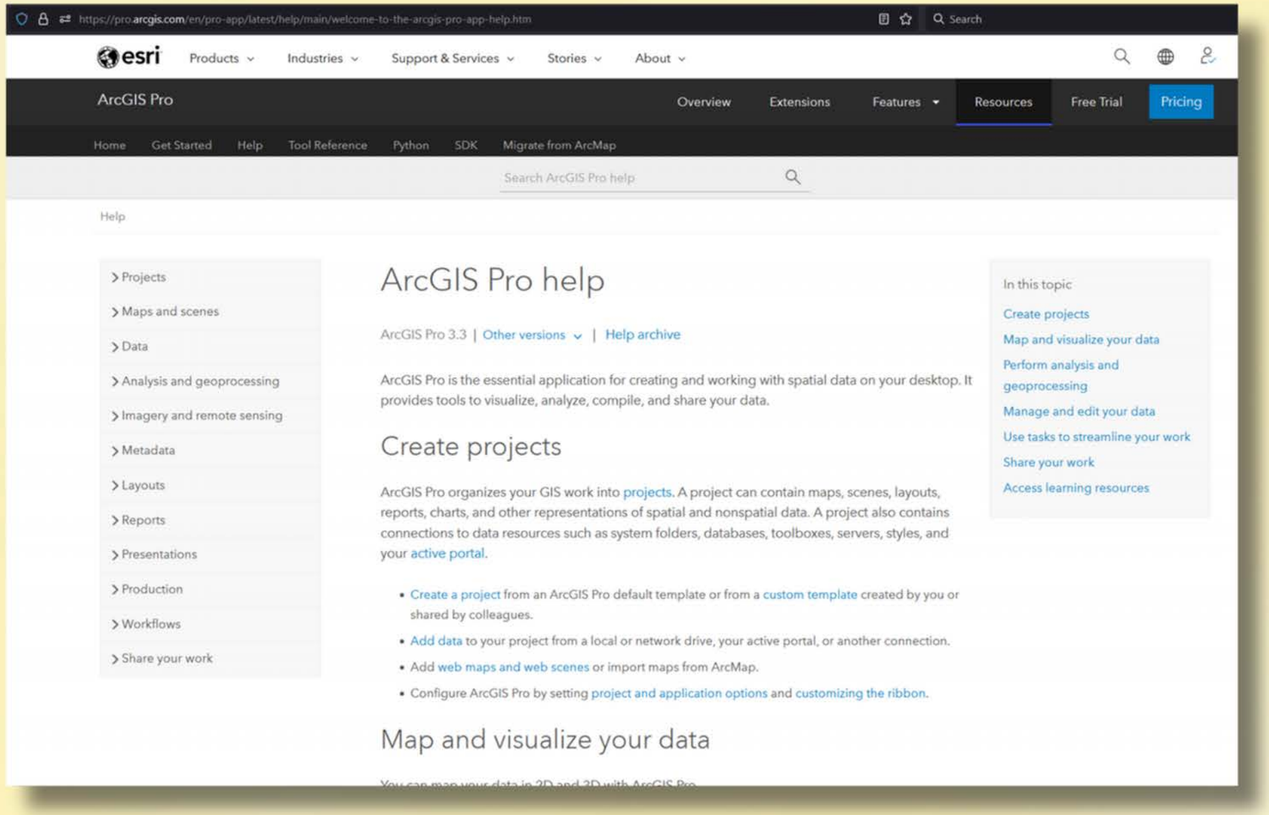
Keyboard shortcut	Action
Ctrl+O	Open a project.
Ctrl+N	Create a project.
Ctrl+S	Save the project.
Ctrl+M	Open a new map.
Ctrl+F1	Show or hide the ribbon.
F12	Open the Keyboard Shortcuts dialog box.
Ctrl+E	Open the Export pane to export a map, layout, or report.
Alt+Q	Search for a command.
Alt or F10	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**

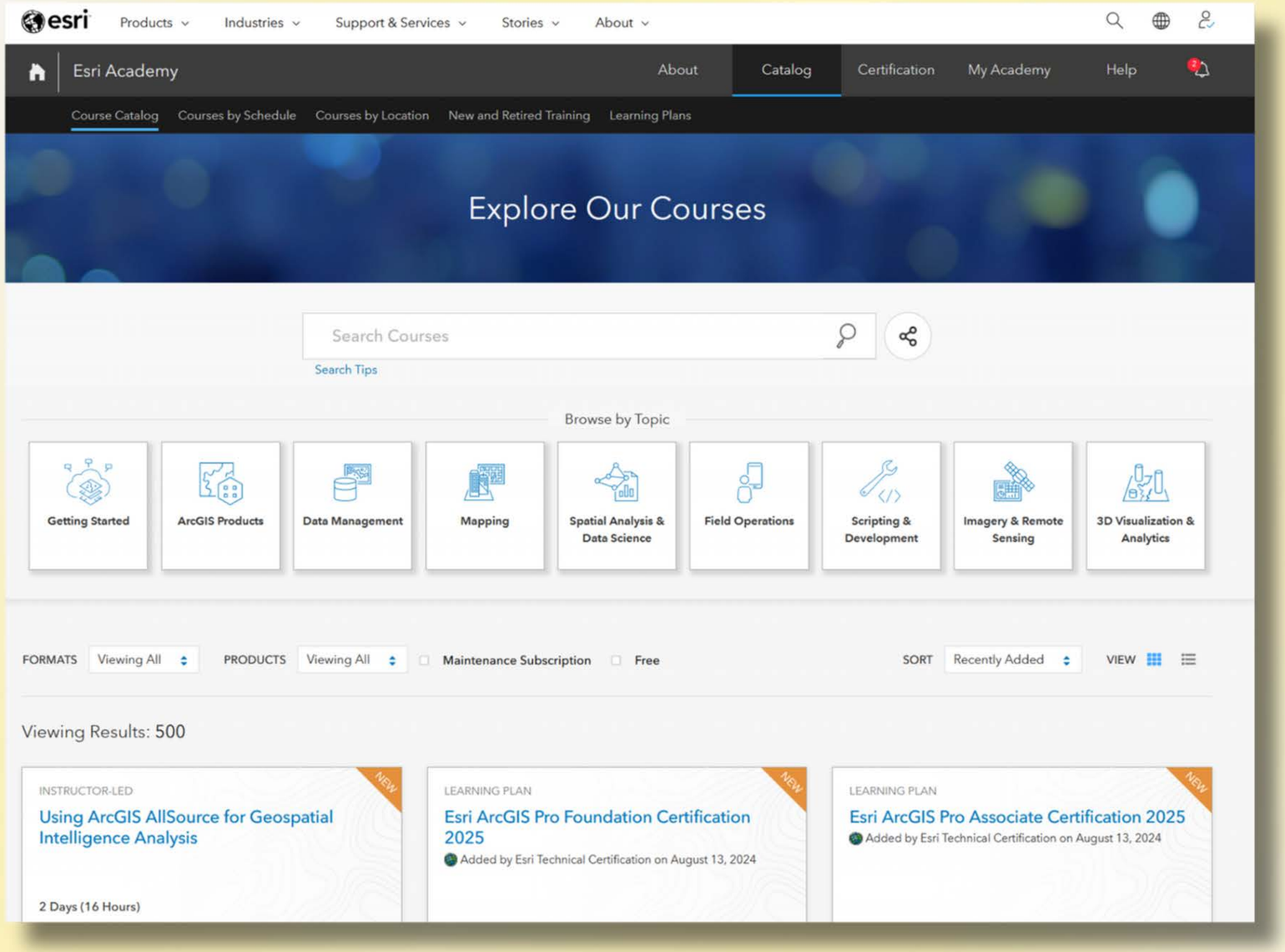
- A website will be launched where you can access detailed documentation for the latest version of Pro.





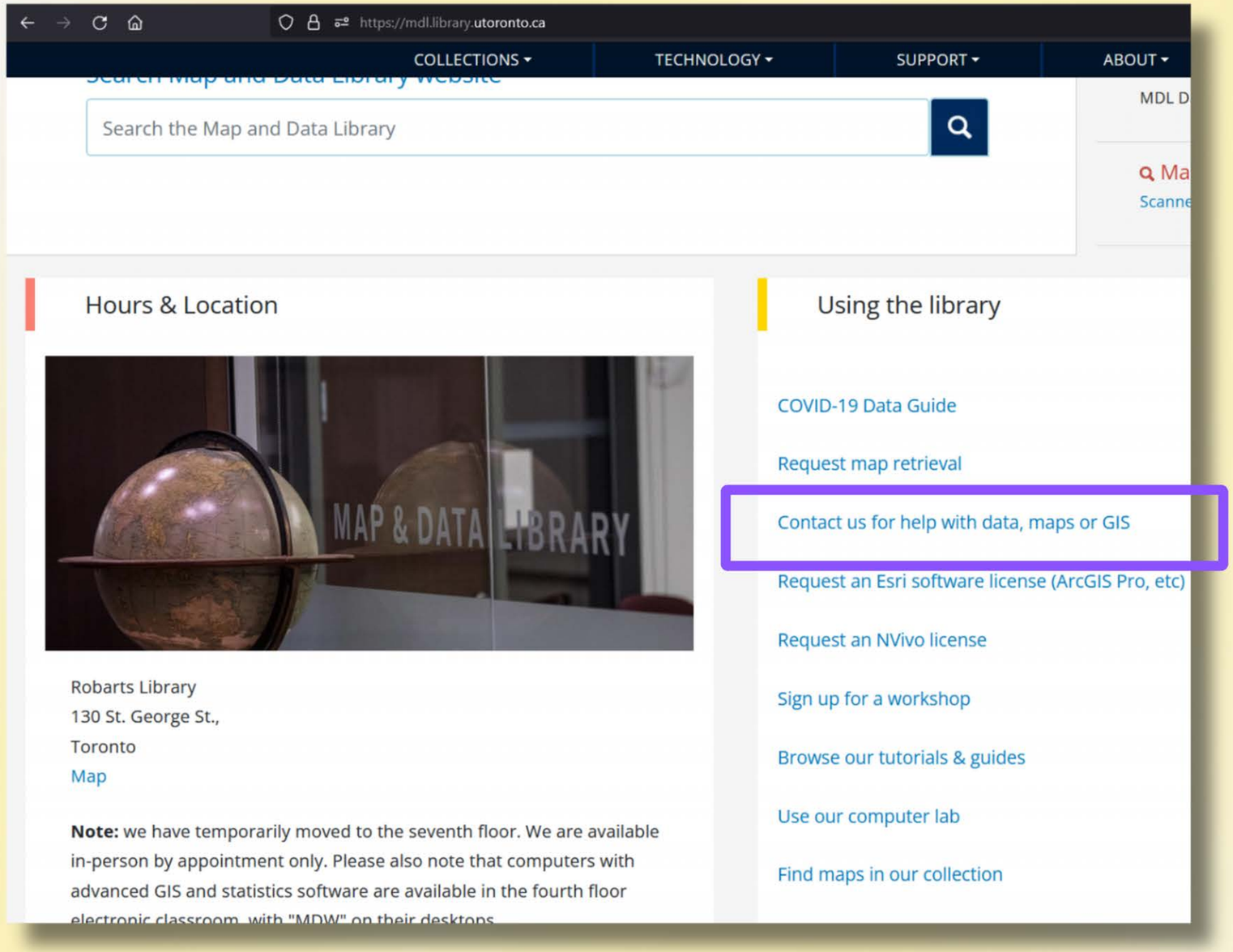
Getting Help

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



Getting Help

- Contact the Map and Data Library



Next Steps

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

Thank you!