



MINERAL SYSTEMS ATLAS — HELP

VERSION 1.3 — MAY 2021

Government of Western Australia
Department of Mines, Industry Regulation and Safety

Mineral Systems Atlas

Getting Around Identify Tools Drawing & Measurement Data Help & Feedback

What's New? Mineral Systems Atlas Guide Tips & Tricks Download Individual Mineral Systems Same area in GeoVIEW.WA

Full Extent Previous Extent Next Extent Pan Zoom In Zoom Out

Zoom Tools

Layers

All Available Layers

Filter Layers...

- Topography & Index
- Primary data layers
- Tectonic units
- Komatiite-hosted nickel
- Iron formation
- Rare-element pegmatite
- Layered intrusion-hosted vanadium

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Layers 300km 350 Lat Long





WELCOME

Welcome to the Mineral Systems Atlas, an evolving and interactive GIS-based platform that delivers tailored data layers relevant to Western Australian mineral deposits. Layer content is defined using a Mineral Systems Analysis approach, and derived from primary Geological Survey geoscience data. Atlas users can compile any combination of mineral system layers, learn how the derived layers were created, and export these layers and underlying data for use in their own GIS platforms.

TABLE OF CONTENTS

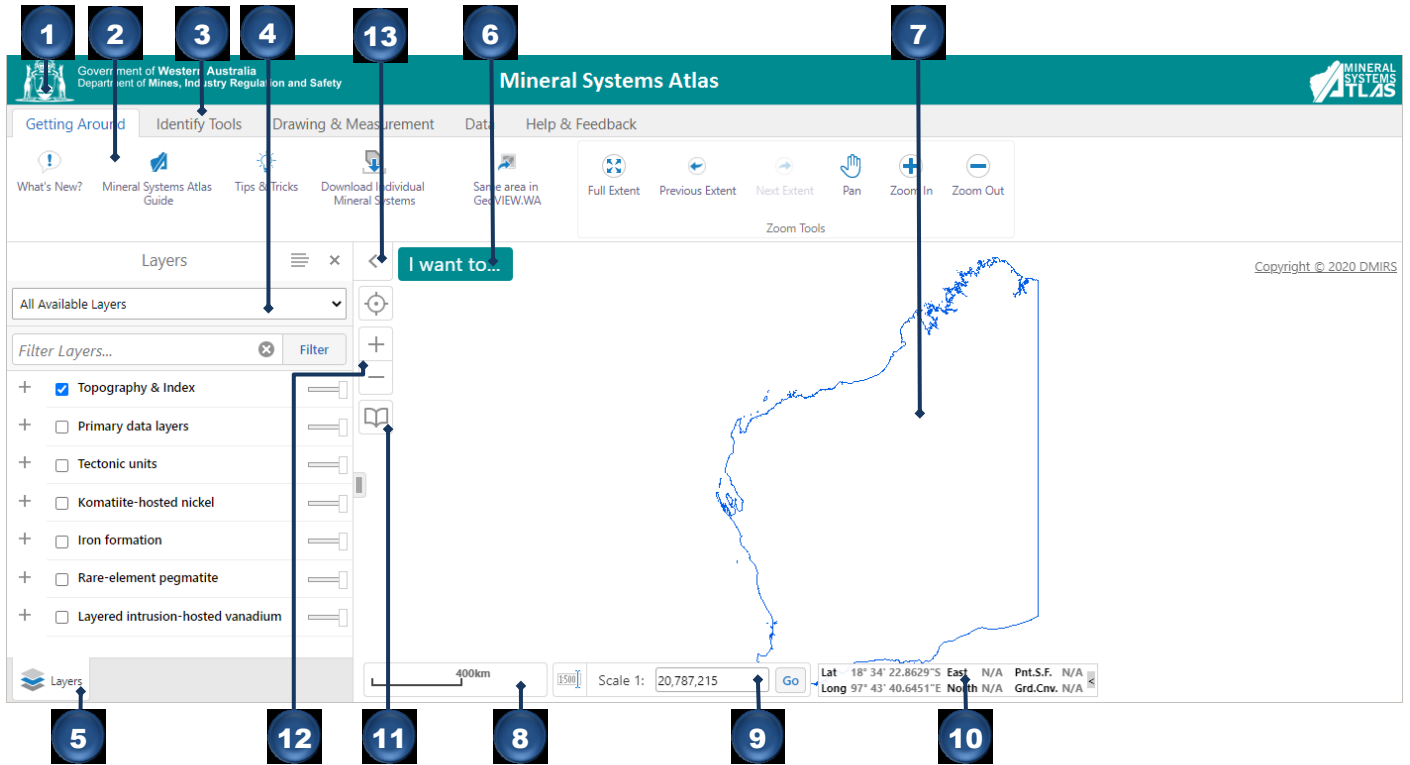
- The Main Screen..... 1
- Get Started 2
 - Get Around..... 2
 - Change What You See..... 2
 - Different Views 2
 - Navigate Around The Map 2
 - About the Toolbar 3
- Getting Around Tab 4
 - Use the Pan, Zoom and Bookmark Tools 5
 - Pan Tool 5
 - Zoom Tools..... 5
 - Zoom In and Out 5
 - Full Extent, Previous and Next Extent Tools 5
 - Map Scale Box and Scale Bar 5
 - Jump to a Map Bookmark 6
- Identify Tools Tab 7
 - Use the Identify Tools 8
 - Include/exclude layers from the Identify process 11
 - Add a buffer around an identify area..... 11
 - Snapping in the Identify process..... 12
- Drawing & Measurement Tab..... 13
 - Drawing Tools 13
 - Edit a Drawing 14
 - Work with Coordinates 16
 - Measure Tools..... 19
 - Measure Distance and Area on the Map..... 19
- Data Tab 21
 - Upload Data 21
 - Add a CSV File 24
 - Share..... 25
- Use the Simple Search..... 26
 - Use the Advanced Filter builder..... 27
 - Print..... 28
- Help & Feedback Tab..... 29
- The Information Panel..... 29
 - The Results List 30
 - Map Layers/Layer List 32
- The “I want to...” Menu 35
- The Context Menu..... 35
- Open and Close the Information Panel 36
- View the Map Legend 37



Appendix	38
About GIS and Computerized Maps	38
What is GIS?	38
Information in Computerized Maps	38
Layers, Features and Attributes	38
About Web-Based Maps	39
About Map Scales	39
How Scale Works	39
About Layers	40
Vector Layers	40
Raster layers	40
About Map Themes	41

The Main Screen

When you open the Atlas, you see a screen similar to the one below. It may contain a different map and some extra features, but it is likely to have most of the features described. In the example below, all the navigation elements like the toolbar, the information panel and the **I want to...** menu are visible so that they can be described. Some of these elements may be hidden.



Navigation features in the main screen of the Viewer

Number	Screen Element
1	Viewer title bar: Displays the title of the application.
2	Toolbar: The toolbar contains numerous tools that are grouped into tabs by function.
3	Toolbar tabs: The toolbar consists of tabs that categorize the tools into high-level groups: Getting Around, Identify tools, Drawing & Measurement, Data, and Help & Feedback.
4	Layer Theme: Select from a list of predefined Layer Themes (i.e. Sedimentary) or All Available Layers (default).
5	Information panel: This panel lists different kinds of information when you interact with the map. For example, it displays Map Layers where you can select different layers to hide or show on the map or it displays a list of map features in the Results List when you perform a search or use the Identify tool.
6	I want to...: A menu of shortcuts to frequently-used tools. This menu tries to anticipate what you will want to do most often.
7	Map: The map window where you interact with the map by zooming, panning, annotating, or right-clicking to get more information.
8	Scale bar: Graphical representation of current map scale in Kilometre units.
9	Scale: The current scale of the map.
10	Mouse Position: The position (co-ordinates) of the computer cursor on the current map. To hide the mouse position, click the small arrow on the right.
11	Bookmarks: Zoom to a predefined map extent or create a custom map extent for quick navigation.
12	Zoom In/Out: Use these buttons to zoom in or out of the map in step increments.
13	Information Panel Toolbar: Contains icons that you can use to control the information listed in the Information Panel. Clicking different icons changes the information to Map Layers, Results and any other options configured for the map. The Information Panel opens when you run a tool. To open it manually, click the arrow to the left of the I want to... menu. To display Information panel OR To hide Information panel.



Get Started

A web-based map is different from a paper-based map. For one thing, it allows you to move around the map and zoom in and out. Web-based maps contain many different types of information and this information is added layer by layer. Building a map — in layers — enables the interaction with the map such as to query, filter or analyze the information stored on those layers. This makes web-based maps powerful tools.

Get Around

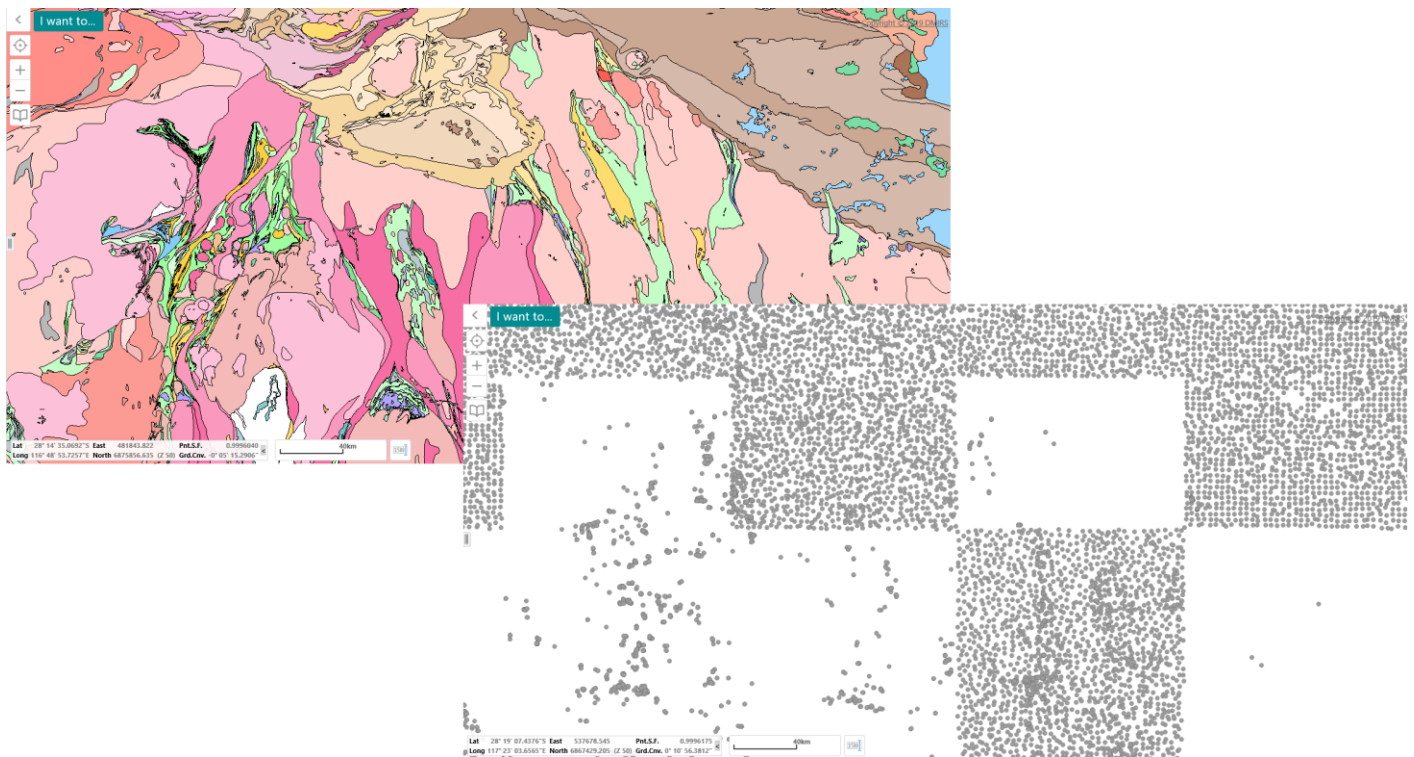
The map has many different navigation features that make it easy to move around, for example, you can click the map and scroll your mouse wheel to zoom in or out. If you have a touch screen, you can touch the screen and drag the map to move it around, double-tap to zoom in, or pinch-out to zoom out.

Change What You See

Different Views

Because web-maps are built in layers, it is easy to control what you see in the map. You can also change what you see by switching different layers on or off, or by choosing a **Layer Theme**, which contains only specific layers.

For example, you could change the map layer from a geology layer to a geochemistry layer. The Geology map shows you a traditional Geology map but the geochemistry shows sample locations of the same area.





Example of geology and geochemistry layer.

Navigate Around The Map

Interactive maps provide many choices for displaying information, searching for more details, and moving around the map. Most navigation uses the mouse but at times you also use a combination of key presses in combination with scrolling using the mouse wheel or dragging across the map.

On the desktop map, you can use the following controls:

To... 	Do this... 
Pan or move the map.	Click on the map and drag in any direction.
Pan left or right.	Press the Left- or Right-arrow keys.
Pan up or down.	Press the Up- or Down-arrow keys.
Pan in or out.	Press the Plus + key to zoom in . Press the Minus - key to zoom out .



To...	Do this...
Zoom in or out.	Scroll the mouse wheel away from you to zoom in; towards you to zoom out. Or Use the Step Zoom: click the Plus + or Minus - to zoom in or out.
Zoom in to a specific region on the map.	Press SHIFT and drag a rectangle around the area you want to zoom in to.
Zoom out to a specific region on the map.	Press Control + SHIFT and drag a rectangle around the area you want to zoom out to.
Open/Close the Toolbar.	Double-click the title bar, or click the Show/Hide the Toolbar button.
Open the context menu. 	Right-click on the map. This menu changes depending on the map and how the application is configured.

About the Toolbar

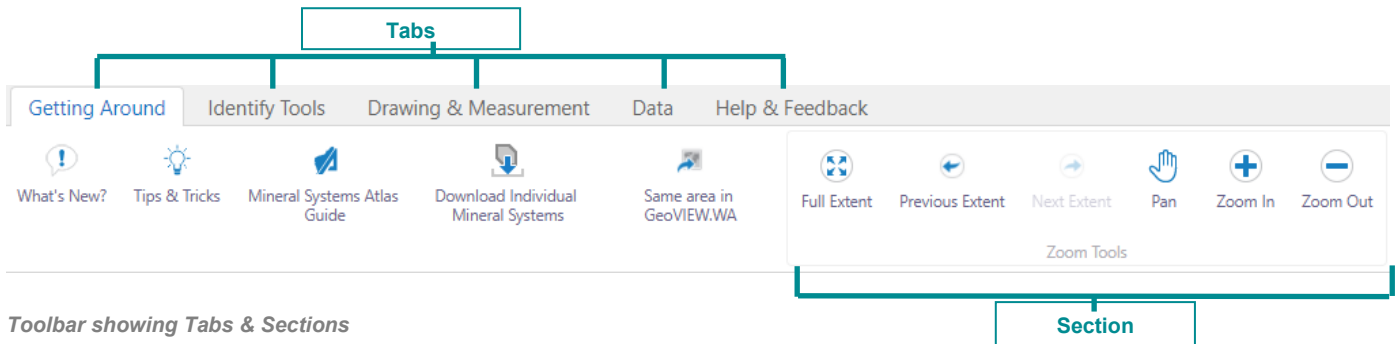
The toolbar contains many of the tools that you use to move around, zoom in and out, as well as find and manipulate the information that is stored in the map. The toolbar will be open when you start the Mineral Systems Atlas. If it is closed, you can open the Toolbar at any time by clicking the Toolbar button in the top right corner of the map:



Toolbar button

There is another way to open the toolbar: Double-click the title bar of the application. To make it easier to find a particular tool, they are grouped on the toolbar at two levels:

1. The toolbar is divided into tabs or ribbons that group the tools into high-level functions, for example, **Getting Around**, **Identify Tools**, **Drawing & Measurement**, **Data**, and **Help & Feedback**.
2. Each tab is divided into sections by function, for example, on the **Getting Around** tab, there are **Zoom Tools**.

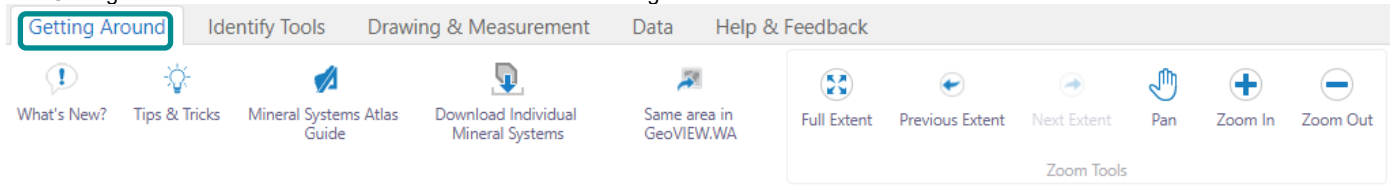


Toolbar showing Tabs & Sections



Getting Around Tab












The Getting Around tab of the toolbar contains tools to facilitate navigation. Most of the tools are activated when clicked.



Getting Around tab of the toolbar

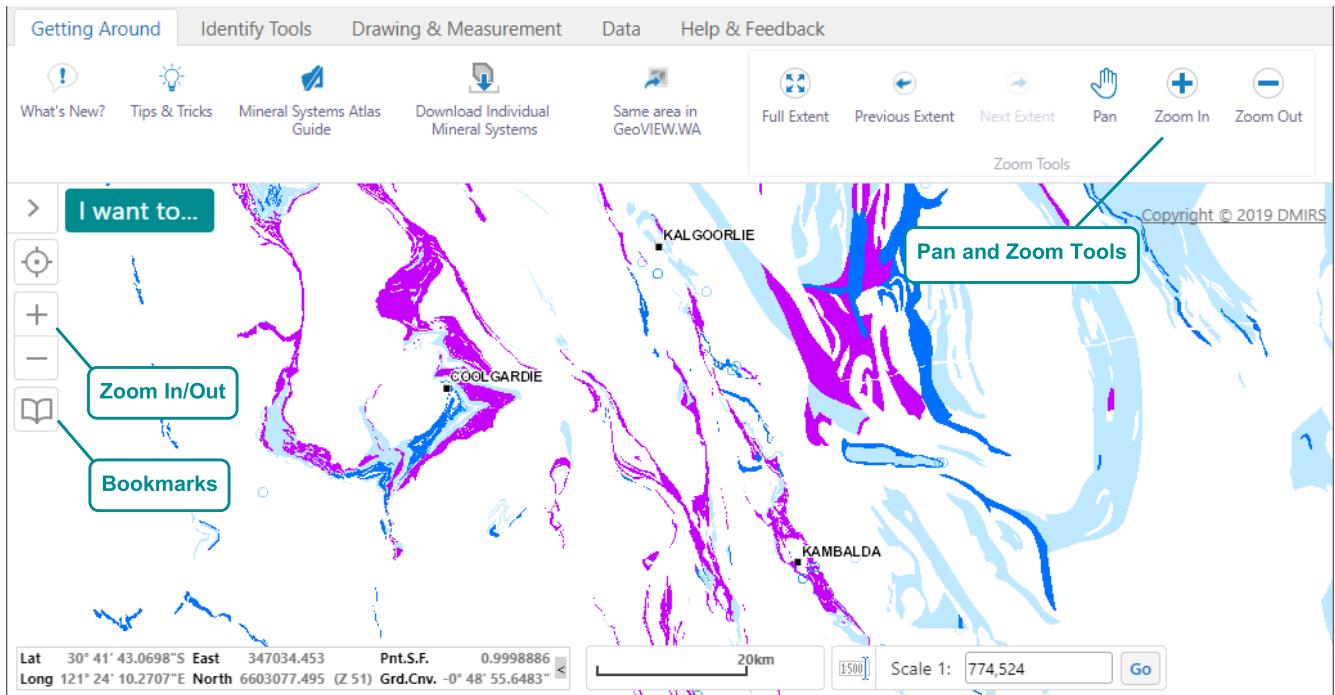
The tools in this tab are grouped into these sections:

- **Zoom Tools:** Tools for jumping to specific extents, panning and zooming.

Use this tool...	To...
 What's New?	Lists the new features and layers added.
 Tips & Tricks	Open the Tips and Tricks file
 Mineral Systems Atlas Guide	Open the Mineral Systems Atlas Guide in another tab.
 Download Individual Mineral Systems	Download individual Mineral Systems in various formats.
 Same area in GeoVIEW.WA	Open GeoVIEW.WA with a similar extent to allow comparison of layers between the platforms.
 Full Extent	Show the full extent of the current map.
 Previous Extent	Jump to the previous extent.
 Next Extent	Jump to the next extent.
 Pan	Pan (move) the map in any direction. To pan the map, click on it and drag in any direction. Use the Pan tool to return to panning when you have used other tools.
 Zoom In	Zoom in when you click on the map.
 Zoom Out	Zoom out when you click on the map.

Use the Pan, Zoom and Bookmark Tools

The ability to pan and zoom in and out of the map is a key feature of web maps, so it is not surprising that there are many different ways to do this on the map.



Pan, Zoom and Bookmark tools make it possible to move quickly to specific areas of a map

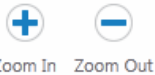
- **Pan Tool**

You can use the **Pan** tool to drag the map in any direction, or use the arrow keys on the keyboard to move in increments up, down, or sideways.

- **Zoom Tools**

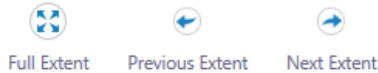
How to use the **Zoom In/Out**:

Click the **Plus +** or **Minus -** to zoom in or out on the map.



- **Zoom In and Out**

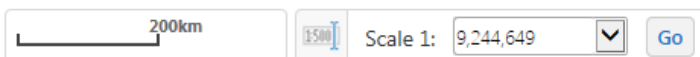
When you click the **Zoom In** or **Zoom Out** tools, then click the map it zooms to the next scale increment and centers the map. Scrolling with a wheel mouse also enables you to zoom in (roll wheel forward) and zoom out (roll wheel backwards). You can use the **Zoom** tools more precisely by clicking the tool and dragging a box on the map. Releasing the button zooms to the area defined by the box.



- **Full Extent, Previous and Next Extent Tools**

Full Extent zooms out to maximum envelope of all datasets. **Previous Extent** takes you back to last extent and **Next Extent** takes you forward to the next extent in the sequence.

- **Map Scale Box and Scale Bar**



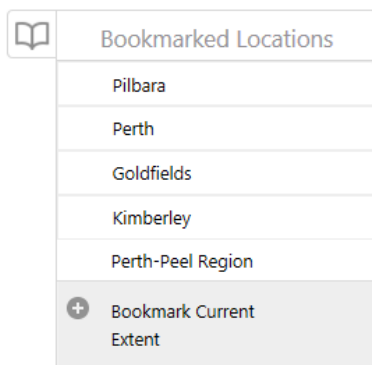
Another method of zooming uses the **Map Scale** box. The **Map Scale** box shows the current map scale but you can type in a particular scale and then press **Enter** to jump directly to a particular scale.

The **Scale Bar** shows the estimated scale of the map at any given extent.



Jump to a Map Bookmark

Although it is not strictly a zoom tool, another way to move quickly to a given extent and point on the map is to mark it as a bookmark. To do this, you zoom to the point and extent that you want and then click the + beside the **Bookmark Current Extent** tool.



Use bookmarks to jump to a place and an extent

Once you have given the bookmark a descriptive name and clicked **OK**, you can then jump to that feature and extent on the map with one click.

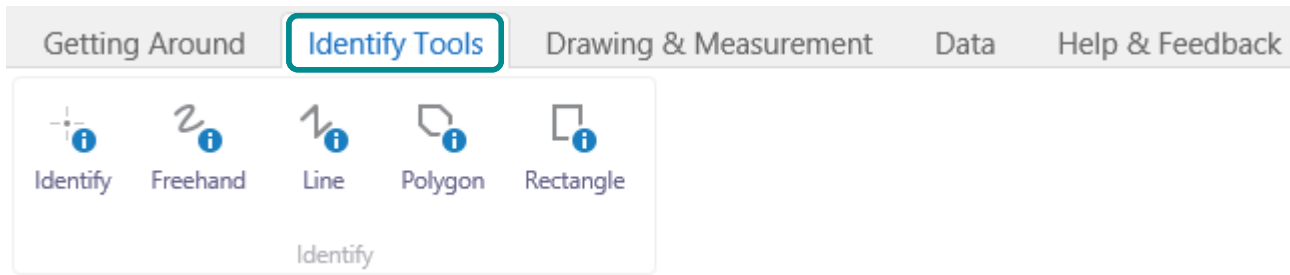
Bookmark Current Extent ×

Bookmark Name:














Identify Tools Tab

The Identify Tools tab of the toolbar contains tools to help you find feature information.



Identify Tools tab

Identify: Use several Identify tools to find data by layer, including buffered data.

Use this tool...	To...
 Identify	Identify data at a particular point anywhere on the map. All the features beneath the point you click are listed in the Results List.
 Freehand	Identify features by drawing a line in any direction on the map. All the features that intersect with the line you draw are listed in the Results List.
 Line	Identify features by dragging a line in any direction on the map. All the features that intersect with the line you draw are listed in the Results List.
 Polygon	Identify features by drawing a segmented shape over an area on the map. All the features beneath the shape you draw are listed in the Results List.
 Rectangle	Identify features by drawing a rectangle over an area on the map. All the features beneath the shape you draw are listed in the Results List.
 Enable buffering	Add a measured area around each area you identify.
 Enable Add Results	Enable adding results to the existing identify results
 Enable Subtract Results	Enable subtracting results from the existing identify results
 Enable Snapping	Enables you to precisely draw shapes on the map by snapping to the nearest point, vertex or edge of an existing shape.
 Select Snapping Layers	Select layers to snap to.
 Identifiable Layers	Define the layers to include or exclude in the identify process.



Use the Identify Tools

The **Identify Tools** allow you to search for information in the selected and visible layers. You define an area on the map by drawing a shape, then the application returns all the information in the **Results List** from the layers in that area. The Identify tool is also available along with several more tools for identifying the area you want to search. You can exclude layers from the Identify process and also add an additional buffered area around the area you define.

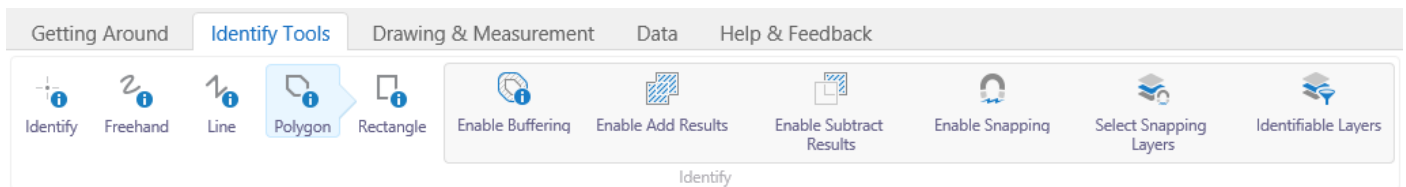
When you use an **Identify Tool**, it searches multiple layers at the same time. However:

- If a layer is off (not visible), that layer's information will not be included in the Identify process.
- If the layer is not in visible at the current scale (text is gray), that layer's information will not be included in the Identify process.

The results of the identify process are displayed in the **Results List** in the same way that **Search** results are displayed. As the application finds features, it begins displaying the results in the **Results List** immediately. The results are grouped by layer.

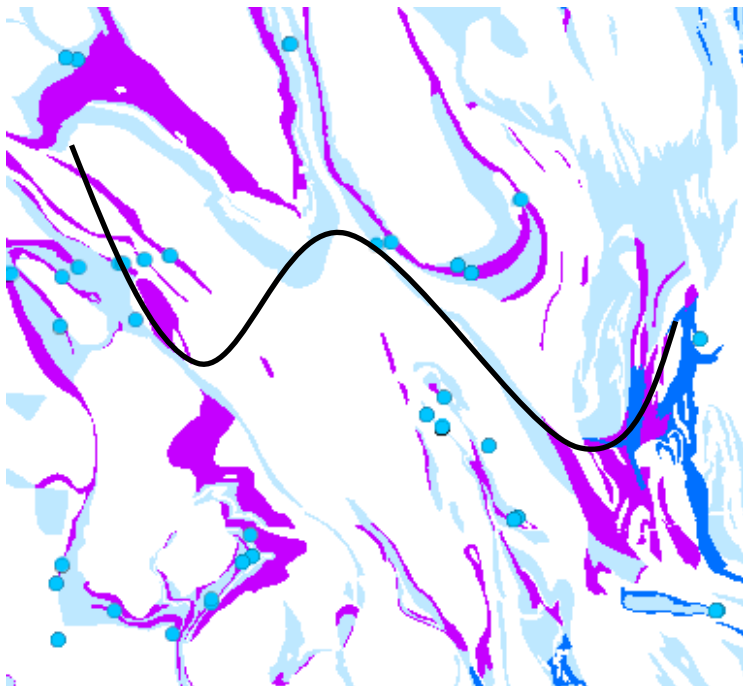
To identify features by drawing on the map:

1. If any of the layers you want to include in the search are in gray text, click on that layer and then click **Zoom To Visible Scale**.
2. Click the **Identify Tools** tab of the toolbar to find the identify tools.



Identify tools on the Identify Tools tab of the toolbar

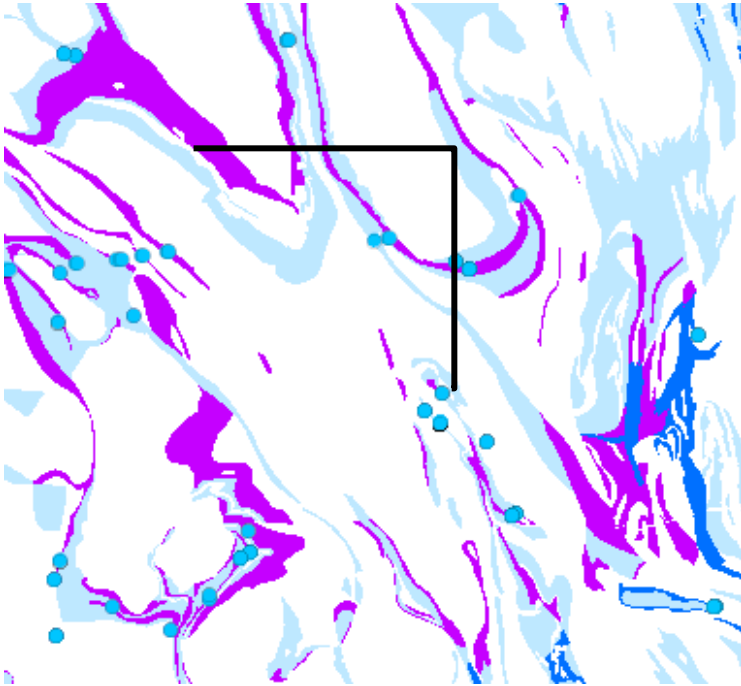
3. To define an area to identify, do any of the following:
 - Click **Identify**, and then click any point on the map. Any features found at that point on the map are included in the identify process.
 - Click **Freehand Identify**, and then draw in any direction on the map over any features that you want to include in the identify process. When you release the button, the identify process begins, and all the features that intersect the line are included in the identify process.



Draw a freehand line to identify features

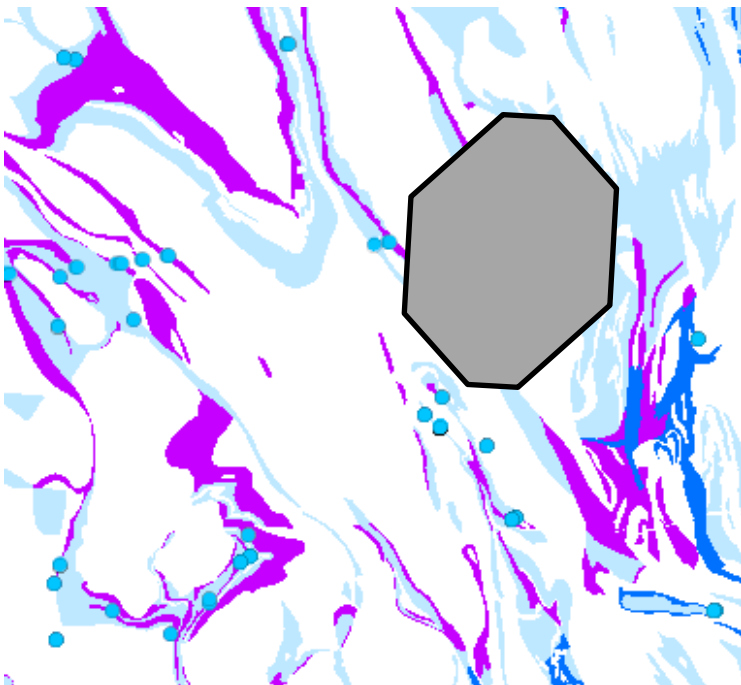
- Click **Line Identify**, then single click on the map and drag across the map to draw a line.

To continue the line but change direction, click the map and then drag in the new direction. To end the line, double-click. All the features that intersect with the line are included in the identify process.



Draw a line to identify features under it.

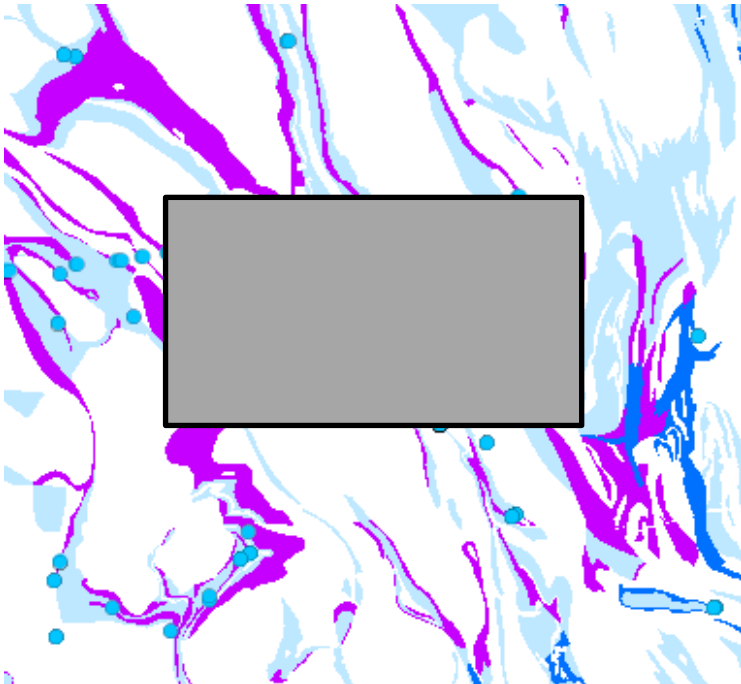
- Click **Polygon Identify**, and then drag across the map to start a polygon. To change direction, click and drag in a new direction. A black shading appears under your cursor to indicate that the polygon is filling in the space of the area. Continue to click until the shading has covered the area you want to include in the identify process. Double-click to end the polygon. You do not have to complete the shape. As long as the shading covers the area, you can double-click and the line will be completed automatically. All the features beneath the shaded area are included in the identify process.



Draw a polygon to identify features under the shaded area








- Click **Rectangle Identify**, and then click on one corner of the area you want to define. Drag a square away from the corner you clicked. A black shaded square appears under the cursor. When your area is enclosed in the square, lift your finger from the mouse. All the features covered by the rectangle are included in the identify process.



Draw a rectangle to identify features under the shaded area

When features are listed in the **Results List**, they are grouped by layer:

Identify Results (42)		☰	×
 (3) Ni/Cr SOURCE	>		...
 (1) Mg# SOURCE	>		...
 (19) Geochemistry-Ultramafic	>		...
 (11) Ultramafic SOURCE-TRAP	>		...
 (8) Komatiite SOURCE-TRAP	>		...

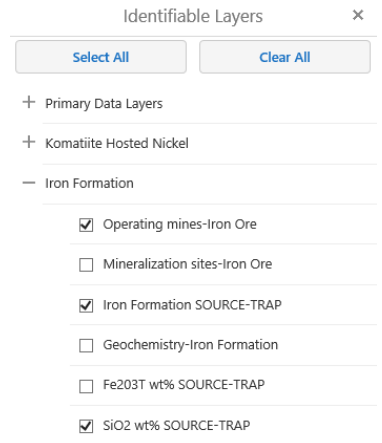
Identify results listed by layer



Include/exclude layers from the Identify process

To include/exclude layers from the Identify process:


1. In the **Identify Tools** tab of the toolbar, click one of the **Identify** types to display the **Identifiable Layers** button.
2. To exclude a single layer, click the checkbox in front of the layer so that it is no longer selected.
3. To exclude all layers, click **Clear All**, and then select the layers you want to include.

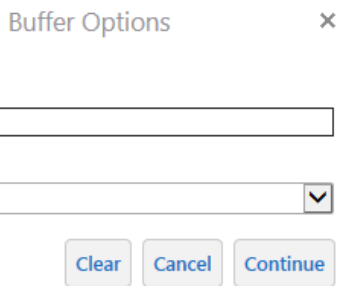


Add a buffer around an identify area

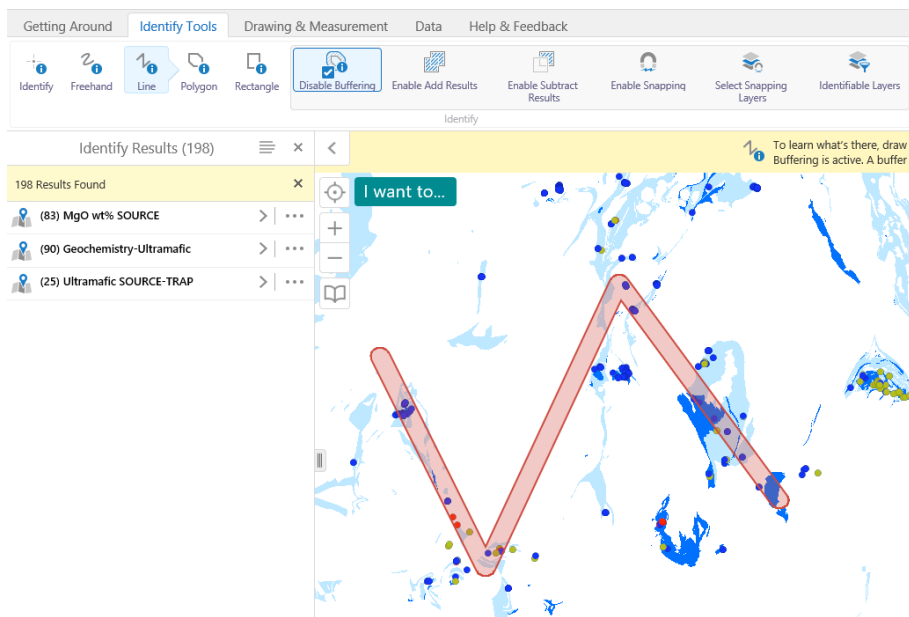
You can add a buffer — a measured area — around any identify area that you draw. You specify the distance from the edge of your area to add as a buffer before you draw on the map.

To add a buffer around an identify drawing:

1. In the **Identify Tools** tab of the toolbar after selecting an identify type, click the **Enable Buffering** button .
2. Select any of the **Identify** tools and draw over the area you want to identify. The **Buffer Options** dialog box opens.
3. Do any of the following:
 - **Distance:** Type in the distance from the edge of your drawing to the edge of the buffer.
 - **Unit drop-down list:** Specify the distance measurement in Feet, Yards, Meters, Kilometers, Miles or Nautical miles.



Entering options for a buffered identify




Results of a buffered identify

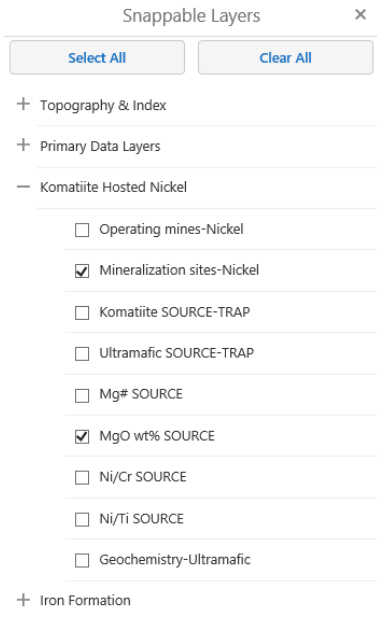


Snapping in the Identify process

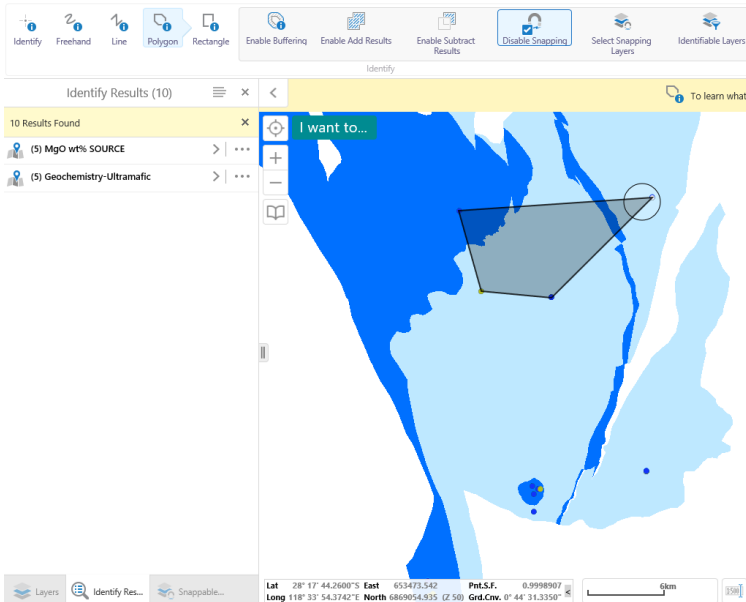
When enabled, snapping allows you to precisely draw shapes on the map by snapping to the nearest point, vertex or edge of an existing shape within a configurable radius around the mouse pointer. Layers affected by snapping can also be selected.

Enable Snapping:

1. Enable or disable snapping by either clicking the **Enable Snapping** toggle button , or pressing the keyboard shortcut **F**.
2. Click on **Select Snapping Layers** to choose which layers will participate in the snapping function.



3. Start drawing with the selected identify tool with snapping enabled. The snapping feature snaps to the nearest point, vertex or edge to the mouse pointer in that order. For example, if snapping is enabled and a point feature, a vertex, and an edge are similarly near the mouse pointer, the application will snap to the point feature. Similarly, if there is only a vertex and an edge near the mouse pointer, the application will snap to the vertex.

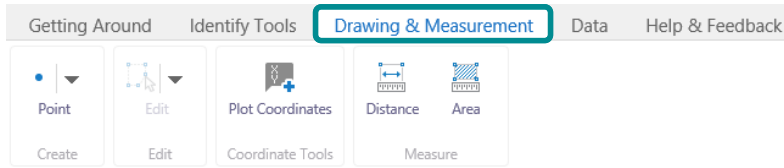


Snapping enabled on Polygon Identify Tool



Drawing & Measurement Tab

The **Drawing & Measurement** tab of the toolbar contains tools for drawing and annotating the map as well as measuring area and distances.


















Drawing & Measurement tab of the toolbar

The tools in this tab are grouped into these sections:

- **Create/Edit:** Drawing and annotation tools to create shapes and text. Editing tools to erase, clear and edit drawings.
- **Coordinate Tools:** Enter and plot coordinates in a variety of coordinate systems.
- **Measure Tools:** Measure distances or areas that you draw on the map.

Drawing Tools

Provide tools for creating, formatting, and editing annotations to the map, including shapes and text. Some tools in this section are active only when an annotation on the map exists and is selected.

Use this tool...	To...
 Point	Draw a point on the map.
 Text	Add text to the map. Click on the map and type the text.
 Line	Draw a straight line or click to change the line and draw in a new direction.
 Freehand	Draw freely on the map in any direction to create a line.
 Freehand Shape	Draw freely on the map in any direction to create a shape.
 Ellipse	Draw an ellipse on the map.
 Circle	Draw a circle on the map. Drag into the centre or outwards to change the size of the circle.
 Polygon	Draw a polygon on the map, clicking to change direction. Double-click to stop drawing.
 Rectangle	Draw a rectangle on the map. Click and drag across the map.
 Edit	Edit the points of a drawing on the map. When you click on the drawing you want to edit, the points activate and you can then drag any of the points in any direction to change the shape of your drawing. You can also rotate the drawing by clicking and dragging the square above the marquee in the middle of the graphic.
 Erase	Remove drawings from the map one at a time by clicking on each one.
 Clear	Clear all the drawings on the map at the same time.
 Enable Snapping	Enables you to precisely draw shapes on the map by snapping to the nearest point, vertex or edge of an existing shape.
 Select Snapping Layers	Select layers to snap to.
 Styles	Choose from the grid to select desired styling.

Edit a Drawing

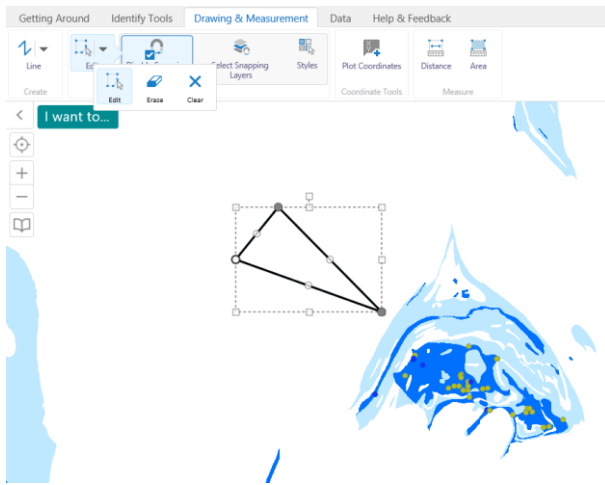
You can edit drawings on the map in several ways:

- Rotate the whole drawing or drag it to a new position on the map.
- Resize or reshape the whole drawing.
- Drag individual point (vertices) of the drawing to a new position.
- Erase one or all the drawings on the map.

You need to click on the drawing to save any changes you make.

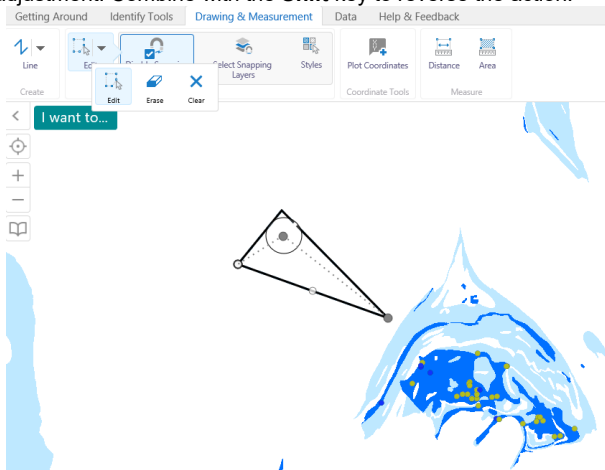
To edit a drawing:

1. On the **Drawing & Measurement Tools** tab of the toolbar, click the **Edit** tool, and then click the drawing you want to edit. A marquee surrounds the drawing with small squares showing all the points (vertices) that you can edit.



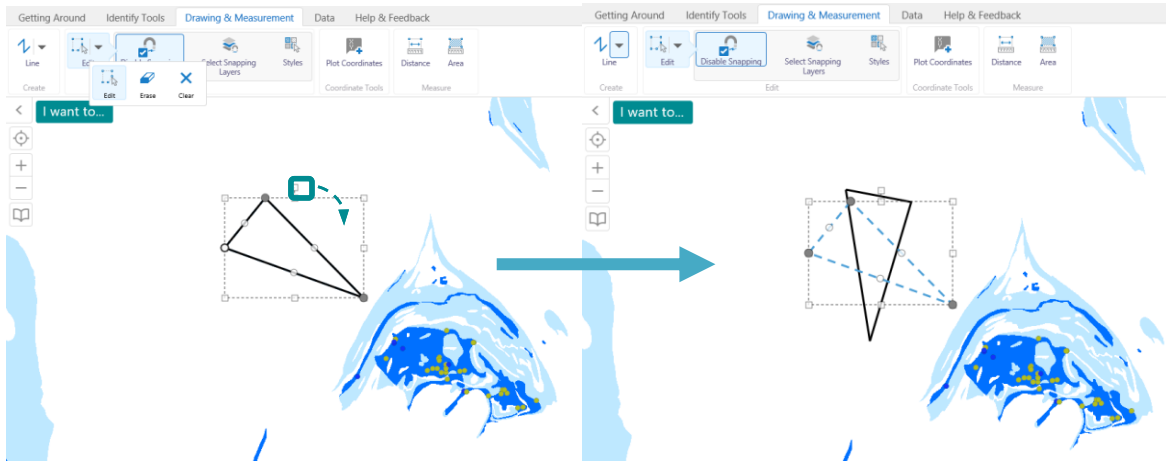
Edit drawing components

2. To change the shape of the drawing, drag any of the points to a new position. As you drag and hold the left mouse button, a dotted line will provide a preview of any adjustments until the button is released. When the left mouse button is released the reshaping of the drawing will complete. While the drawing is in edit mode, you can also use the keyboard arrows to move, press **R** to rotate, **S** to scale, **V** to select vertex (highlighted in blue). Combine with the **ALT** key for finer control and adjustment. Combine with the **Shift** key to reverse the action.



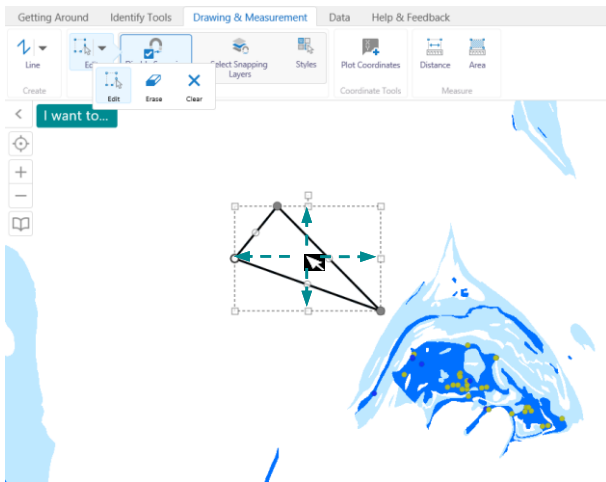
Change the shape by dragging individual points

- To rotate the whole drawing, click the white handle above the marquee and drag it left or right to start rotation. Pressing the **R** key will also rotate in step increments. Hold **Shift** to reverse direction and **ALT** for finer control.



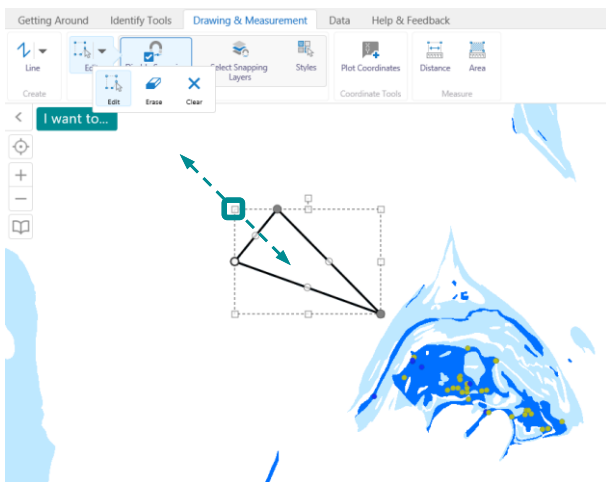
Rotate the drawing

- To move the whole drawing without changing its shape, place your cursor inside the drawing and drag it to the new position.



Move drawing by clicking and dragging in any direction

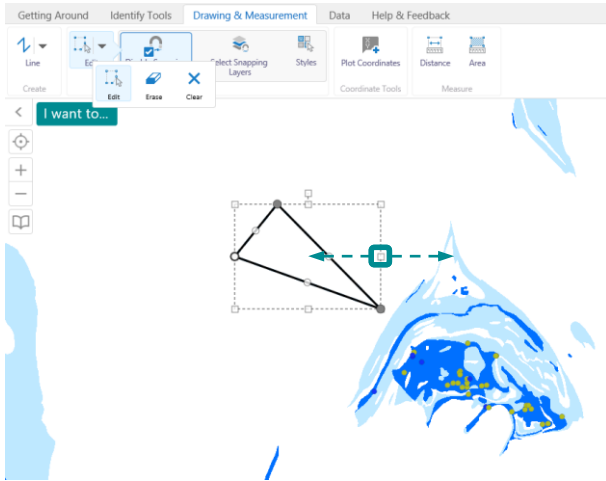
- To resize or reshape the drawing, click the corner handle of the marquee and drag in any direction. Ensure mouse pointer displays as a double arrow otherwise a hand icon may appear which would result in a vertex move. Alternatively, press the **S** key to scale the shape incrementally. Hold **Shift** to reverse and **ALT** for finer control.




Resize or reshape the drawing




- To constrain the drawing to resize along a single axis, click the handle on one side of the marquee (double arrows will appear) and then drag the marquee outwards or inwards on that axis.



Resize along one axis

- To save your changes, click anywhere on the map.
- To remove a drawing, click the **Erase** tool  and then click on any part of a drawing.




To remove all drawings on a map, click **Clear** .

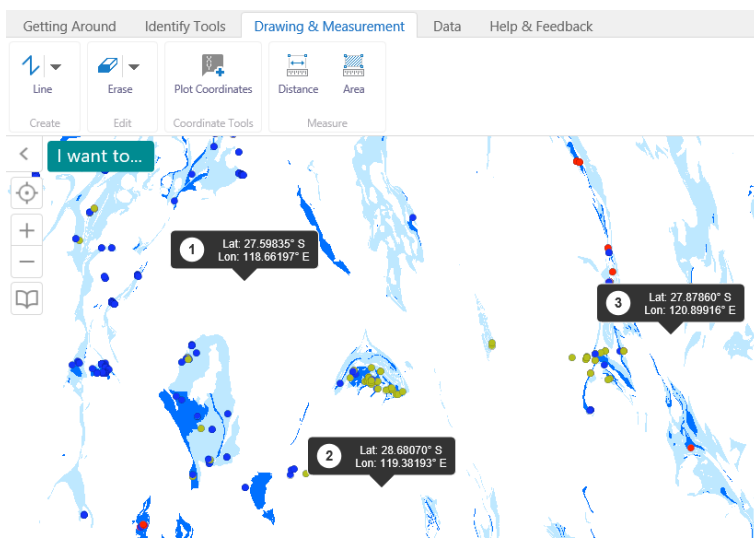
Work with Coordinates

On the **Drawing & Measurement** tab of the Toolbar, the **Coordinate Tools** section contains a tool that allows you to plot coordinates using different coordinate systems. You can select the coordinate system you want to use from the drop-down list, and enter coordinates manually to find them on the map. You can simultaneously add coordinates to the map, or pan to that location on the map. You can plot a series of coordinates on the map and they appear as callouts, which can then be printed. If you then change the coordinate system, all the callouts on the map change to display the coordinates in the notation of the new coordinate system.

To plot coordinates on the map:





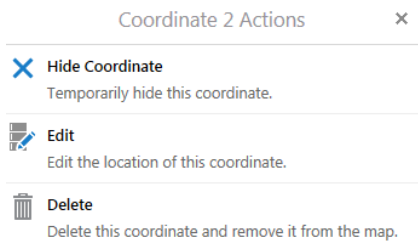
- On the Drawing and Measurement Toolbar in the Coordinate Tools section, click the **Plot Coordinates** tool .
- Click anywhere on the map to insert a callout of the coordinates at that point.



Coordinates plotted on the map

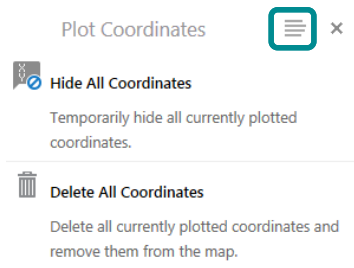


- To delete a callout, click the **Erase** button . Alternatively, click the three ellipses button  beside the list of coordinates in the **Plot Coordinates** information panel and choose **Delete**.



Coordinate Actions

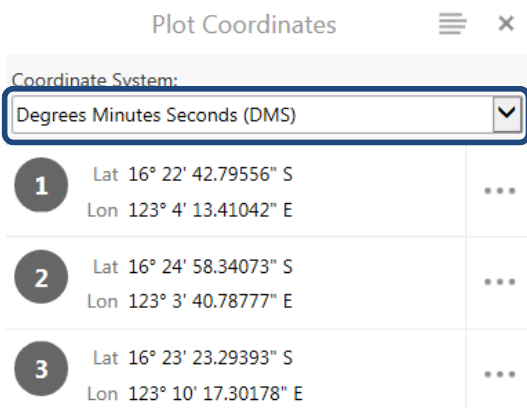
- Clicking the **Panel Actions Menu** provides options to temporarily hide all currently plotted coordinates or delete all coordinates from the map (similar to the **Clear** button).



Display Panel Actions Menu for Plotting Coordinates

To change the coordinate system of plotted coordinates:

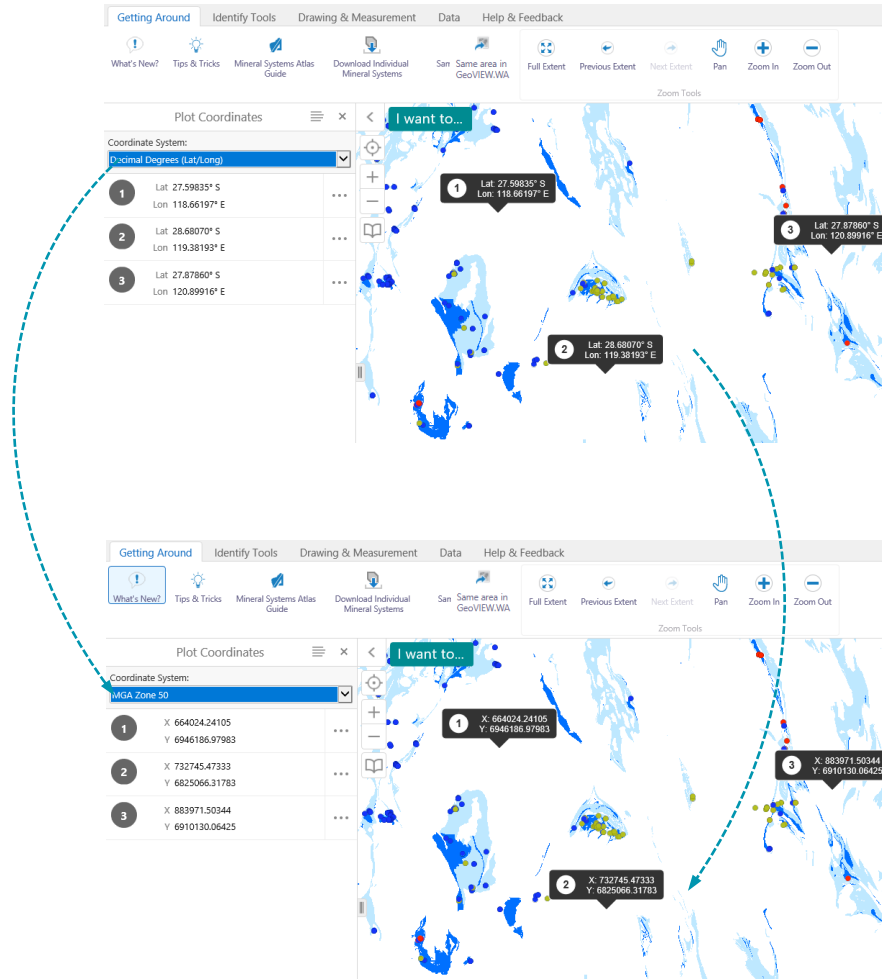
- On the Information Panel, click the **Coordinate System** drop-down arrow.





- Select a new coordinate system from the list.

The callouts plotted on the map change to the notation of the new system.

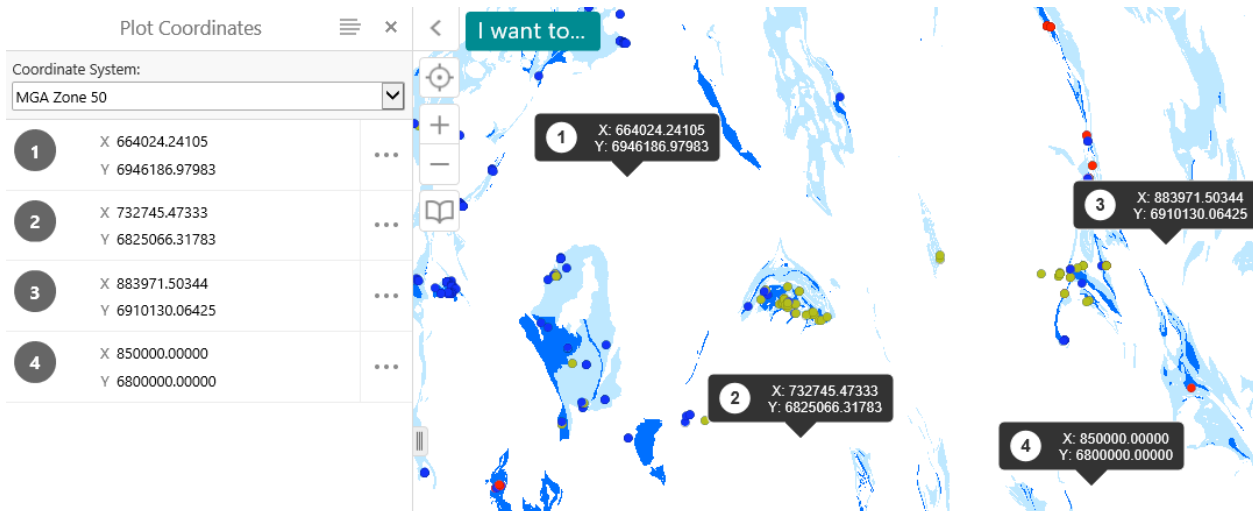


To enter coordinates manually:

- In the Information Panel, click **Add Another Coordinate** Add Another Coordinate
- Manually enter the coordinates in the dialog box and click **Add**.

4





X	850000
Y	6800000



*Results of manually adding coordinates
Mineral Systems Atlas - Help*




Measure Tools

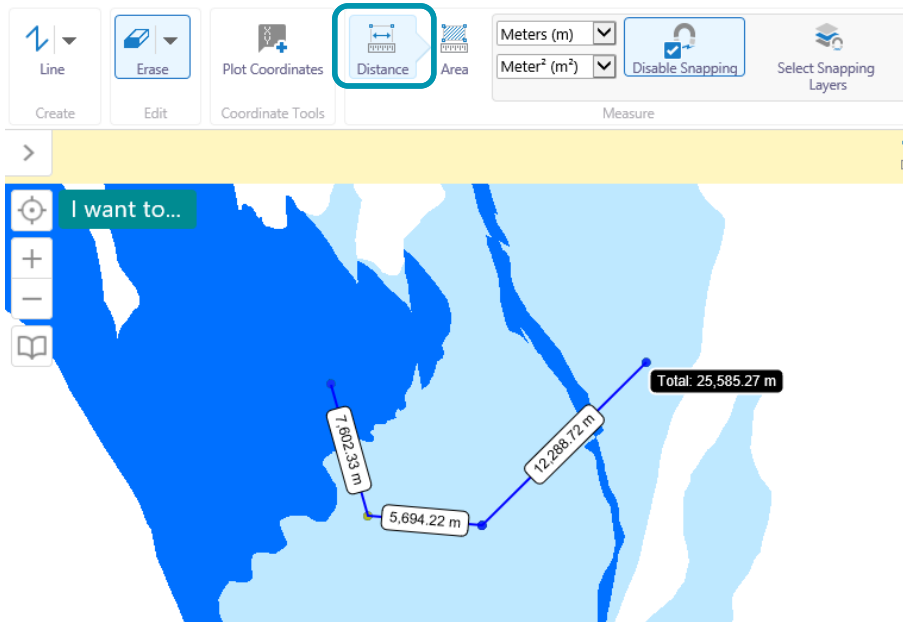
Use this tool... ▼	To... ▼
 Distance	Measure distances on the map by drawing a segmented line.
 Area	Measure an area of the map by drawing a shape.
Meters (m) ▼ Meter ² (m ²) ▼	Change the unit of measurement on a drawing to other options like Yards, Meters, Nautical Miles etc.
 Enable Snapping	Enables you to precisely measure on the map by snapping to the nearest point, vertex or edge of an existing shape.
 Select Snapping Layers	Select layers to snap to.

Measure Distance and Area on the Map


It is possible to measure both distance and area on the map and to add both as a drawing so that you can refer to it later. The measurement tools add measurements in increments as you draw on the map so that you have the distance for each segment as well as the overall distance or area. You can change the unit of measurement used for the **Total Distance**, **Last Segment**, **Perimeter**, and **Area**.

To measure distance on the map:

1. On the **Drawing & Measurement Tools** tab of the toolbar in the **Measure** section, click the **Distance** tool  , and then click on the map at the start of the distance you want to measure.
2. Drag a line and click each time you want to change direction or to create a measured segment. Double click to finish. Whenever you click, the distance of the previous segment appears on the blue line in a white box and the total distance covered in the black **Total Distance** box.



Measurement showing segment and total distances

4. To remove a measurement, click the **Erase** tool  , and then click on any part of the measurement.



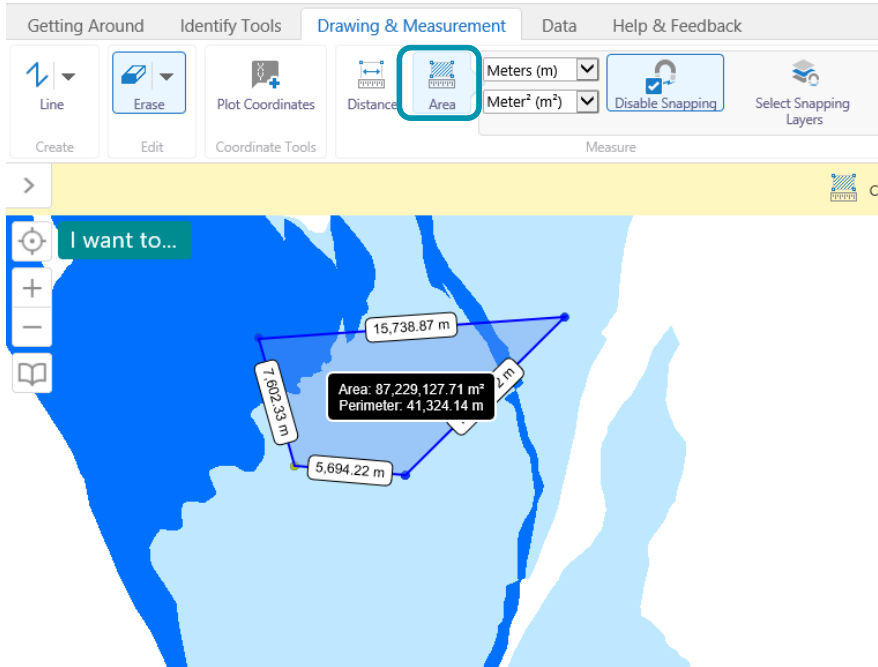
5. To remove all measurements, click  Clear



To measure area on the map:



1. On the **Drawing & Measurement Tools** tab of the toolbar in the **Measure** section, click the **Area** tool **Area** , and then click on the map at the edge of the area you want to measure.
2. Drag a line and click each time you want to change direction or create a measured segment of the perimeter. Double click to close the area measurement shape.
 Each time you click, the length of the previous segment appears on the blue line in a white box and the total area and perimeter are displayed in the black **Totals** box in the centre of the area shape.



Measurement showing segment lengths, perimeter total and area total



3. To remove a drawing, click the **Erase** tool **Erase** and then click on any part of the drawing.



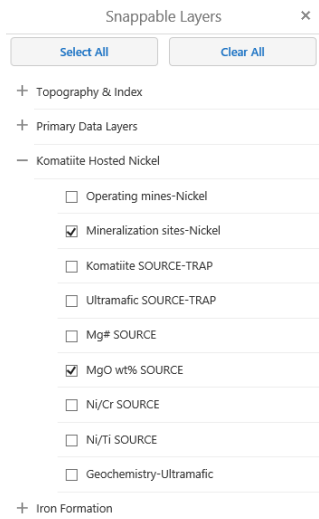
4. To remove a collection of measurement drawings, click **Clear** **Clear** .



To enable snapping select the **Enable Snapping** tool **Enable Snapping** and select layers to snap to by clicking on the **Select Snapping Layers**



Use the **Snappable Layers** dialog box in the information panel to select or clear layers.

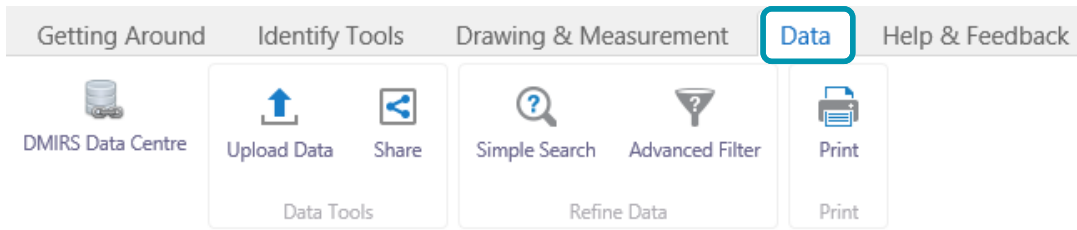


Snappable Layers Selection in Information Panel



Data Tab

The **Data tab** of the toolbar contains tools to control what data is displayed in the map, search and filter functions, and print.



Data tab of the toolbar

The tools in this tab are grouped into these sections:

- **Data Centre:** Link to the Department of Mines, Industry Regulation and Safety – [Data and Software Centre](#).
- **Data Tools:** Add different types of data to the map.
- **Refine Data:** Simple and advanced query functions.
- **Print:** Create a printable map.

Use this tool... ▼	To... ▼
DMIRS Data Centre	Link to the Department of Mines, Industry Regulation and Safety – Data and Software Centre .
Upload Data	Add different types of data to the map. Supported file types are as follows: <i>.csv, .xlsx, .kml, .shp, .gpx, or a .zip containing an ESRI FileGDB or shapefiles</i>
Share	Share current map extent and layers turned on with others.
Simple search	Open the Simple Query Builder in the Information Panel. The Simple Query builder makes it possible to specify a search by layer, field, and values. It is also possible to add multiple conditions to a search.
Advanced Filter	The Advanced Filter Builder opens in the information panel. The Advanced Filter tool allows the user to exclude data that they are not interested in on a particular layer.
Print	Open the Create a Printable Map dialog box where you can select the Layout, Output Format, Resolution, and Scale to print the map.

Upload Data

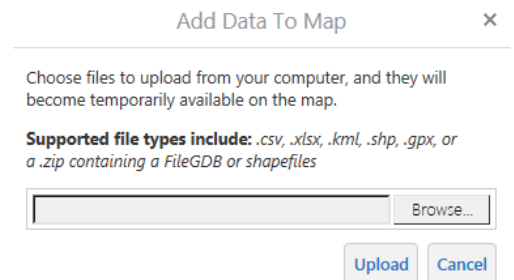
To add a shapefile or any of the other supported file types to a map:



1. On the toolbar, click **Upload Data** .

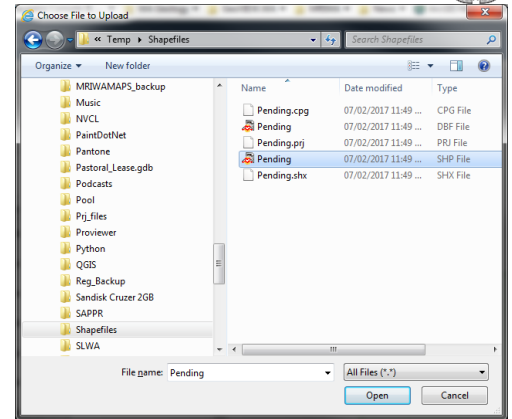
The **Add Data To Map** dialog prompts you to browse to the location of any of the supported file types *.csv, .xlsx, .kml, .shp, .gpx, or a .zip containing an ESRI FileGDB or shapefiles*).

2. Click **Browse** and navigate to the location of the supported file type. In the following example a Shapefile will be used.

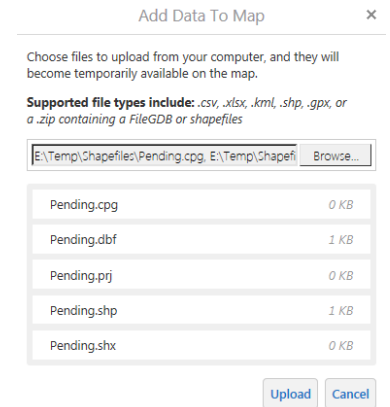




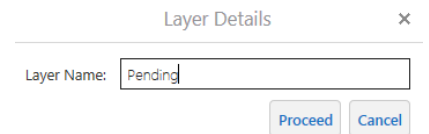
- In the **Open** dialog box, navigate to the shape files, select all the files for that shapefile, and then click **Open**.



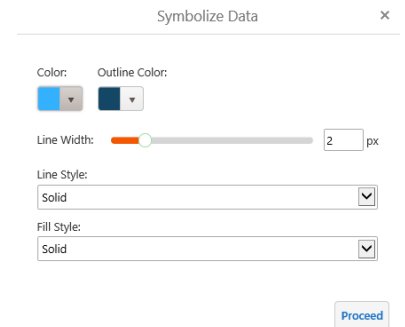
- The following dialog shows the selected file types. Click **Upload** to add to map.



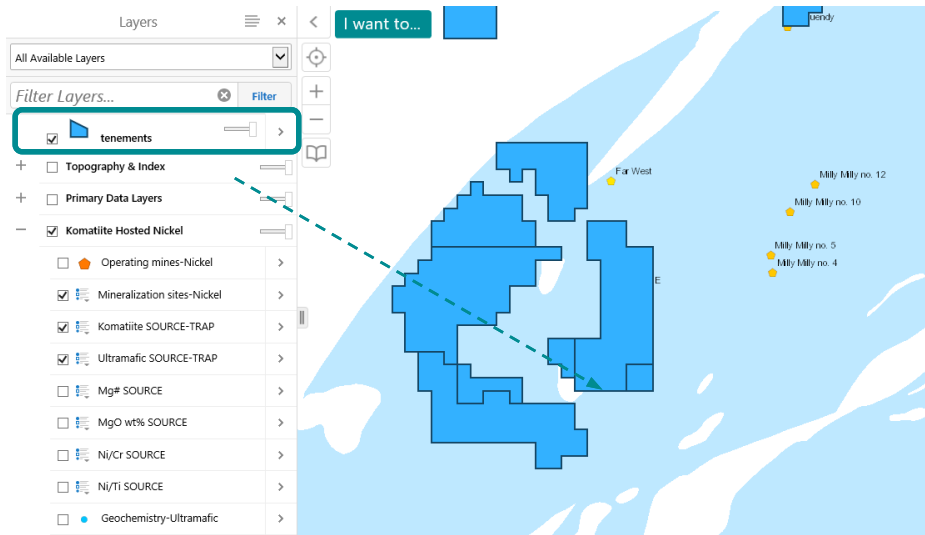
A layer name can now be applied, select **Proceed** to continue.



Symbology can be customized in the **Symbolize Data** dialog box. Make desired changes and select **Proceed** to continue.



- The Shapefile should appear on top in the **Layer List** and zoom/pans to location on the map.



Shapefile added to the map



Add a CSV File

To add a CSV File to the map:

1. Follow steps 1-4 as per Uploading a Shapefile but instead, substitute with location of CSV file.
2. Select the appropriate X and Y columns and Spatial Reference in the **Table Mapping Details** dialog box. **Note:** Projected MGA coordinate systems are available for selection in the Spatial Reference drop-down list. Select **Confirm** to proceed.

3. A layer name can now be applied in the **Layer Details** dialog box, select **Proceed** to continue.

Layer Details ×

Layer Name:

4. A **Table Record Results** dialog box will be presented to display how many records passed and if any were rejected. Select **Done** to proceed.

Table Record Results ×

0 record(s) were rejected.

47 passed.

5. Symbology can be customized in the **Symbolize Data** dialog box. Make desired changes and select **Proceed** to finalize CSV data upload.

Symbolize Data ×

Type:

Color:

Marker Size: px

Line Width: px

Marker Style:

6. The CSV file should appear on top in the Layer List and zoom/pans to location on the map.

Layers ×

All Available Layers

- ◆ Drillhole Coordinates
- Topography & Index
- Primary Data Layers
- Komatiite Hosted Nickel
- Iron Formation
 - Operating mines-Iron Ore
 - Mineralization sites-Iron Ore
 - Iron Formation SOURCE-TRAP
 - Fe203T wt% SOURCE-TRAP
 - SiO2 wt% SOURCE-TRAP
 - Geochemistry-Iron Formation

I want to...

CSV file added to the map
 Mineral Systems Atlas - Help



Share

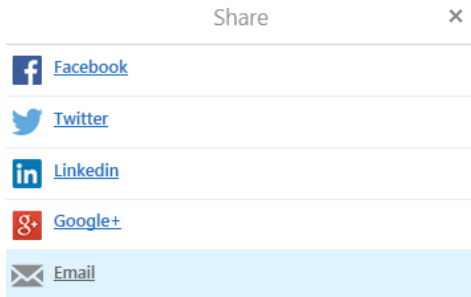
The easiest way to share a map with others is to send the URL of the map you are working with so that they can open the same map in their browser. When you send a URL, the other person can also interact with the map and see all the layers and features that you can see. When you share a map, the following data is visible:

- The current map extent.
- The current visible layers.

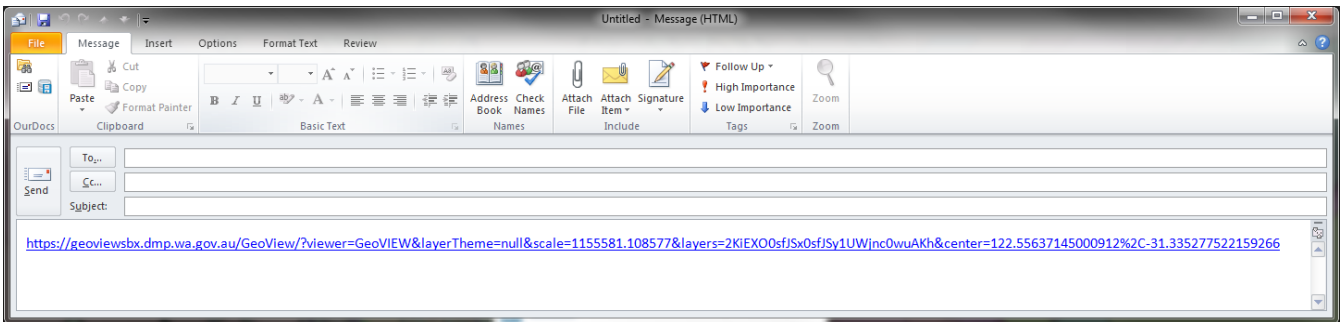
To share a map by sending a URL by email:



1. Click the **Share** on the **Data Tools** section on the **Data** tab.
2. Select **Email** from the **Share** list dialog box.



3. A new email will be composed with a URL embedded into the default email client application ready for sending to a recipient





Use the Simple Search

The **Simple Search** tool makes it possible for you to build complex queries without knowing how to write SQL statements. First you select the layer you want to query, and then you select the records or fields that you wish to query as well as the operator and the value. You can also add multiple conditions to the query. When you run the query, the results display in the **Results List** like all other searches.

To build a query using the Simple Search tool:

1. On the **Data tab** of the toolbar in the **Refine Data** section, click **Simple Search**  [Simple search](#).

Query ☰ ✕

Data Source:
 ▼

Map Area:
 ▼


Find results in Minedex DERIVED where:

All of the following must be true
 At least one of the following must be true

▼ contains ▼ ✕

[Add Condition](#) [Add Subclause](#)

The Simple Search information panel

2. From the **Data Source** drop-down list, select the layer that you want to query. For this example select Minedex DERIVED.
3. From the **Map Area** drop-down list, select whether you want to search the entire area or just the current visible extent.
4. From the **Field** drop-down list, select the field that you want to be in the first part of your query statement, for example, **COMMODITY GROUP**.
5. From the **Operator** drop-down list, select the operator, for example, **contains**.
6. In the **Value** field, type in the value you want to query, for example **"ENERGY"**. As you type, a list of possible options for this value displays.
7. If you want to make the statement more specific, click **Add Condition** and define another set of parameters, or add a **Subclause** into the statement.
8. To remove a condition, click the **Delete** icon .
9. Click **Search**.
10. The results of the query display in the **Results List**.

Minedex DERIVED (697)		☰
Mines and Mineral Deposit - S0000955	> ...	▲
Millipede		
Mines and Mineral Deposit - S0000957	> ...	
Centipede		
Mines and Mineral Deposit - S0000959	> ...	
Hinkler Well West		
Mines and Mineral Deposit - S0000960	> ...	
Jailor Bore		
Mines and Mineral Deposit - S0000963	> ...	
Kintyre		
Mines and Mineral Deposit - S0000967	> ...	
Lake Maitland 1		
Mines and Mineral Deposit - S0000968	> ...	
Lake Mason/Energy Metals		
Mines and Mineral Deposit - S0000969	> ...	
Lake Raeside West		



Use the Advanced Filter builder

Some maps contain multiple layers and complex data. Sometimes you need to reduce the amount of data in order to focus on what is most important. You can use the **Advanced Filter** tool to exclude data that you are not interested in on a particular layer.

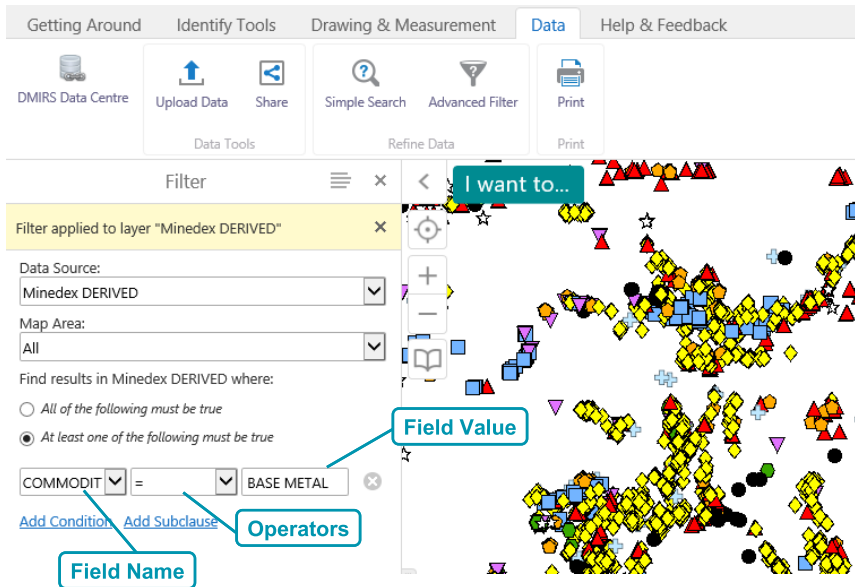
To build a filter using the Advanced Filter Builder:

1. In this example the **Minedex DERIVED** layer for the entire state will be filtered to display only Base Metals. Make sure this layer is made visible under the **Primary Data Layers** group of the **Layer List**.



2. On the **Data** tab of the Toolbar in the **Refine Data** section, click **Advanced Filter** [Advanced Filter](#).

The **Advanced Filter Builder** opens in the information panel.



3. From the **Data Source** drop-down list, select the **Minedex DERIVED**.
4. From the **Map Area** drop-down list, select **All**. **Note:** Smaller areas can be filtered by selecting **Current Extent** under the **Map Area** drop-down list
5. From the **Field Name** drop-down list, select **COMMODITY GROUP** from the list of fields.
6. From the **Operators** drop-down list, select “=” (equals).
7. In the **Field Value** box, start by typing “Ba”. The list of values will auto-filter, select **BASE METAL** when it appears in the list.
8. Click **Filter** to display your filter results on the map.
9. If you want to clear the box and start a new filter, click **Clear**.



Print

When you print a map, you have several options that make it possible to set up precisely how your map should be printed, including the layout, format, resolution, and scale.

To print a map:

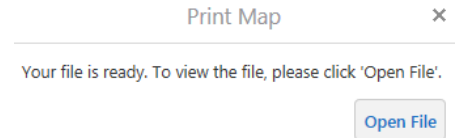
- Do one of the following:
 - On the **Data** tab of the toolbar, click **Print**.
 - In the **I want to...** menu, click **Create a Printable Map**.

The **Create a Printable Map** dialog opens.

Options for printing the map in the Create a Printable Map dialog box

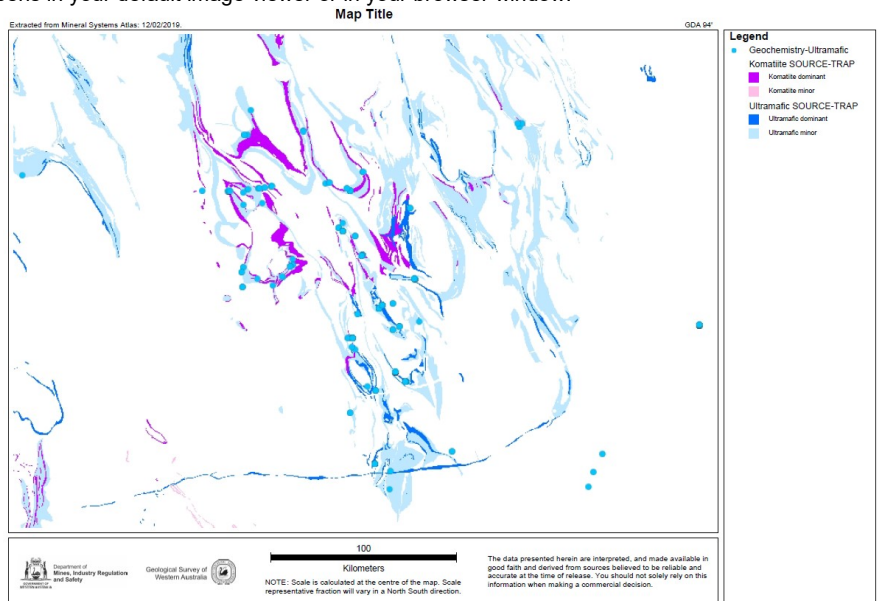
- Select from the following options:
 - Select Layout:** Options include **A0-A4 Landscape**.
 - Output Format:** Options include the **Pdf, Tiff, Jpeg, or Png** formats.
 - Grid:** Add a grid to your map. Options included **Latitude/Longitude (GDA 94)** and **MGA Zones 49-52**.
 - Map Scale:** Options include the **Current Scale** or the **Current Extent**.
 - Title:** Enter a title for your map.

- Click **Print**.
When your print file is ready, a confirmation message displays.



- Click **Open File**.
Depending on your choice of file format, the file opens in your default image viewer or in your browser window.

- Do one of the following:
 - In your browser, click **File | Print**, and then click **OK**; or
 - In a browser with no File menu, right-click the title bar, select **Print** from the title bar, and then click the **Print** button.

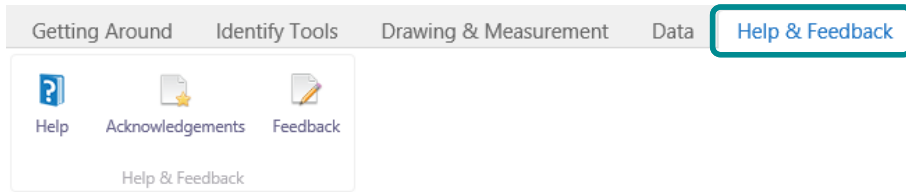


PDF print file open in Adobe Reader






Help & Feedback Tab

The **Help & Feedback** tab of the toolbar contains tools to provide a link to the **Help** document, a link to the **Acknowledgements** document and to submit a **Feedback** email for any queries, problems and suggestions relating to the Mineral Systems Atlas.



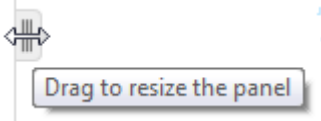
Help & Feedback tab of the toolbar

Use this tool... ▼	To... ▼
 Help	Open the Help document for more detailed descriptions and functionality of the tool tabs and tools. Also provides step by step guides on how to perform common tasks.
 Acknowledgements	Open the Acknowledgment document to view the layers supplied by other agencies
 Feedback	Submit an email in relation to any queries, data and software issues or any suggestions to the Mineral Systems Atlas support staff.

The Information Panel

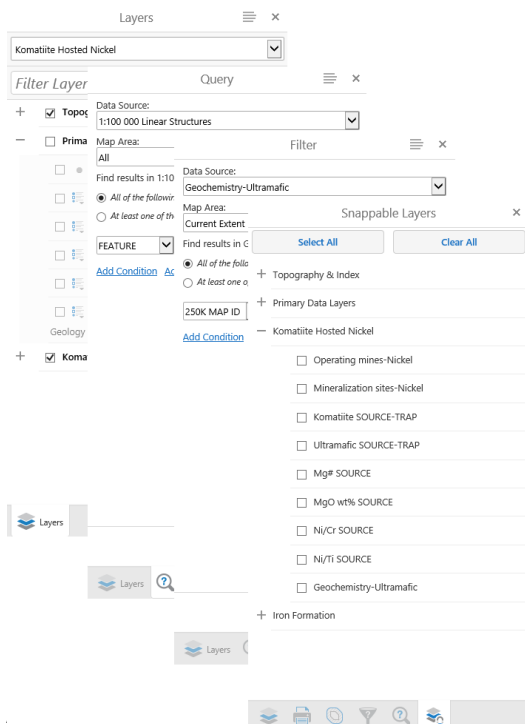
The **Information Panel** is a multi-use panel that displays many kinds of data. When you do a search or use the **Identify** tools, the results of the search or selection display in the information panel and it is then referred to as the **Results List**. When you activate map layers, the panel is referred to as the **Map Layers List** or the **Layer List**.

To resize the information panel, hover over the divider until your cursor changes to a double arrow and then drag left or right.



Cursor changes to a double arrow

Each tool that uses the **Information Panel** has an icon. As you work with a map and use different tools, their icons remain in the toolbar at the bottom of the pane so that you can quickly return to that tool by clicking its icon.



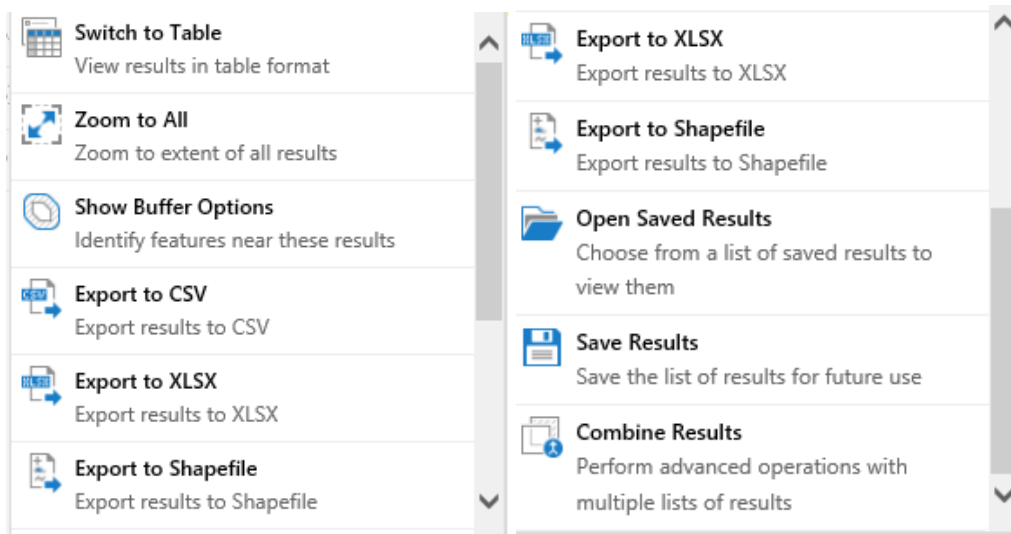
Information panel with multiple kinds of data displayed



The Results List

One of the main functions of the **Information Panel** is to display search results, or list selected features when you use an **Identify** tool. When you use these tools, any results are listed in the **Information Panel** and the title bar changes to **Identify Results**. In this mode, the panel is referred as the **Results List**.

When you click to open the **Panel Actions Menu** from a **Results List**, the following tools will be made available:



Using the Results List:

Once you have a set of search results in the **Results List**, there are many tools that you can use to work with these results. You can change the way the results are displayed and show them as a table, or move the whole panel to the bottom of the map, or save the results for future use and combine results.


The list of search results is just the beginning. Each item in the **Results List** can be used to find out more information about that feature and its attributes.

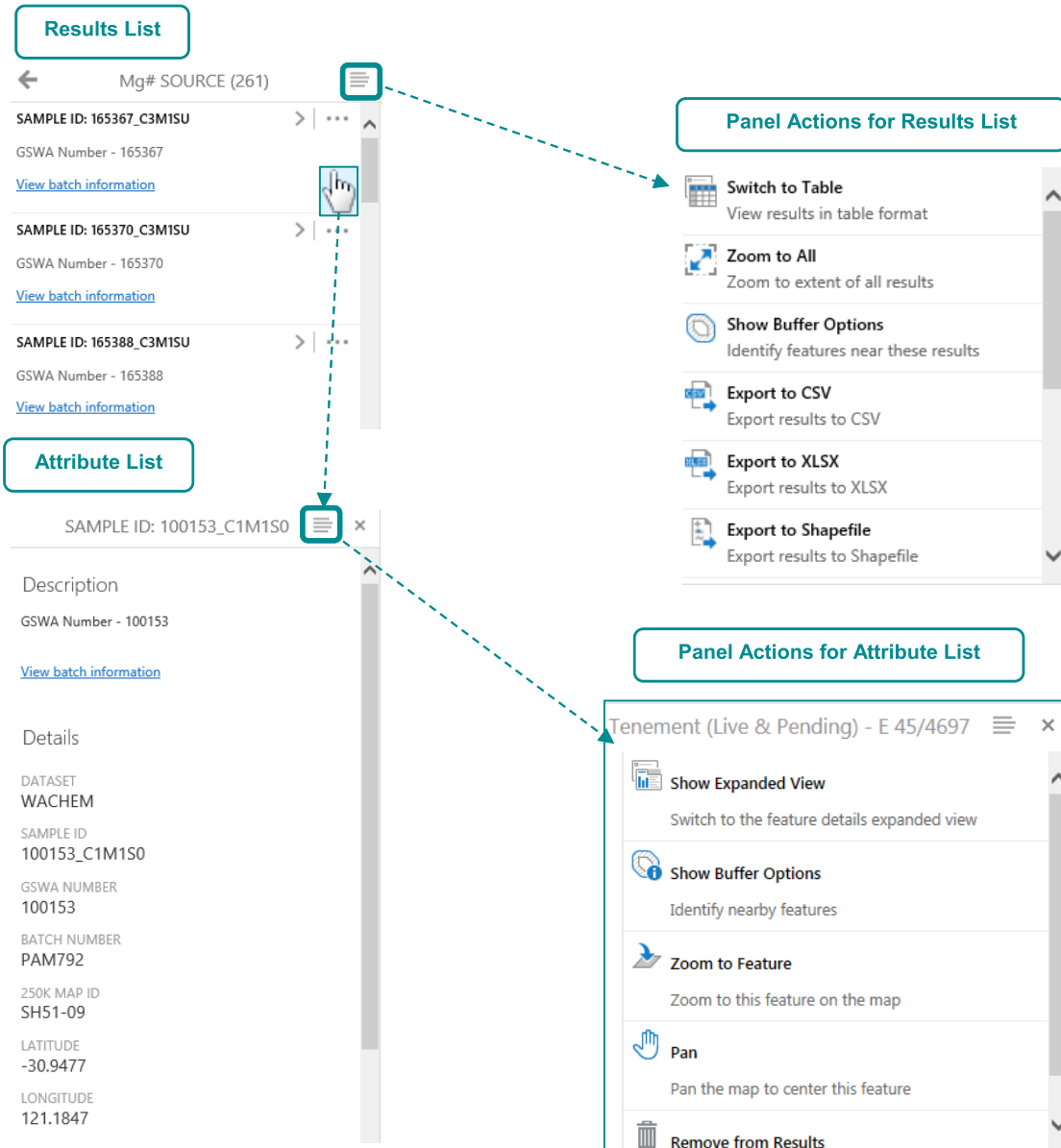
You can display the items of the **Results List** in two Views; **Panel Actions** let you make these changes:








DATASET	SAMPLE ID	GSWA NUMBER	BATCH NUMBER	250K MAP ID	LATITUDE	LONGITUDE	EASTING	NORTHING
WACHEM	165367_C3M1SU	165367	S200216	SH50-04	-28.0721	119.2316	719297	6892798
WACHEM	165370_C3M1SU	165370	S200216	SH50-04	-28.1216	119.2927	725197	6887200

Toggle between Table View and List View in the Results List with Panel Actions



When you click to open the **Panel Actions Menu**  from an **Attribute List**, the following tools will be made available. **Note:** an attribute list is displayed when you click on an item in the **Results List** (see diagram below).



Use this tool... 	To... 
 Show Expanded View	Switch to the feature details expanded view.
 Show Buffer Options	Identify nearby features
 Zoom to Feature	Zoom to this feature on the map.
 Pan	Pan the map to centre this feature.
 Remove from Results	Remove this feature from the current set of results.


Using the Attributes List:

- To find a feature's attributes, select the feature in the **Results List**. The window displays a list of details and attributes about the feature, with links to more information.



Map Layers/Layer List

Another important list that appears in the information panel is **Map Layers**, which is sometimes referred to as the **Layer List**.

Map Layers open when you click the arrow  beside the **I Want To...** menu.

Because maps often have many layers, the layers in **Map Layers** are organized into groups that you can collapse and expand. When you first open the **Map Layer**, some groups may be open while others are closed. Similarly, some layers may be visible on the map while others are not.

Beside each layer or layer group, there is a checkbox that is used to turn a layer on or off . Beside layer group, there is a plus icon **+** or minus icon **-** that you use to expand or collapse the layers inside the group. Expanding and collapsing groups does not change which layers are visible on the map; it simply helps you stay organized.


The screenshot shows the 'Layers' panel with the following structure:

- Topography & Index (Folder closed)
- Primary Data Layers (Folder open)
 - Geochemistry RECALC (Layer off)
 - Minedex DERIVED (Layer off)
 - 1:100 000 Linear Structures (Layer off)
 - 1:500 000 Linear Structures (Layer off)
 - Geology MERGED (Layer on but not visible at the current scale)
- Komatiite Hosted Nickel (Folder open)
 - Operating mines-Nickel (Layer off)
 - Mineralization sites-Nickel (Layer off)
 - Komatiite SOURCE-TRAP (Layer on)
 - Ultramafic SOURCE-TRAP (Layer on)
 - Geochemistry-Ultramafic (Layer on)
 - Mg# SOURCE (Layer off)
 - MgO wt% SOURCE (Layer off)










Layers listed in folders











Legend Symbology can be seen next to the layer name for layers with single symbols. For other layers that have symbology based on unique

values, click on the  symbol next to the layer name.

Single Symbol

+ <input type="checkbox"/>	Primary Data Layers	
- <input checked="" type="checkbox"/>	Komatiite Hosted Nickel	
<input type="checkbox"/>	 Operating mines-Nickel	>
<input type="checkbox"/>	 Mineralization sites-Nickel	>
<input type="checkbox"/>	 Komatiite SOURCE-TRAP	>
<input type="checkbox"/>	 Ultramafic SOURCE-TRAP	>
<input type="checkbox"/>	 Geochemistry-Ultramafic	>
<input type="checkbox"/>	 Mg# SOURCE	>
<input type="checkbox"/>	 MgO wt% SOURCE	>
<input type="checkbox"/>	 Ni/Cr SOURCE	>
<input type="checkbox"/>	 Ni/Ti SOURCE	>

Unique Value Symbols

+ <input type="checkbox"/>	Primary Data Layers	
- <input checked="" type="checkbox"/>	Komatiite Hosted Nickel	
<input type="checkbox"/>	 Operating mines-Nickel	>
<input checked="" type="checkbox"/>	 Mineralization sites-Nickel	>
	 Mine	
	 Deposit	
	 Prospect	
	 Occurrence	
<input type="checkbox"/>	 Komatiite SOURCE-TRAP	>
<input type="checkbox"/>	 Ultramafic SOURCE-TRAP	>

Legend displayed in Map Layers




Using the Layer Actions Menu:

1. To turn a layer on or off, click the checkbox in front of that layer.

Layers ☰ ×

All Available Layers ▼

Filter Layers... ✕ Filter

+ <input checked="" type="checkbox"/>	Topography & Index	
- <input checked="" type="checkbox"/>	Primary Data Layers	
<input type="checkbox"/>	 Geochemistry RECALC	>
<input type="checkbox"/>	 Minedex DERIVED	>
<input checked="" type="checkbox"/>	 1:100 000 Linear Structures	>

Layers with text that is pale gray are not visible at the current scale.



- To zoom directly to where a layer is visible, click the **Layer Action** button  in the list, and then click **Zoom to visible Scale**.

Click **Zoom to visible Scale** in the **Layer Actions** menu

- To view more information about the layer select **Metadata** from the **Layer Actions Menu**. When selected, another Tab in the Web browser will be created to display Metadata information.
- To view a Data Dictionary of the Layer, Select **Data Dictionary** from the **Layer Actions Menu**. When selected, another Tab in the Web browser will be created to display a PDF document of the Data Dictionary.



1:100 000 State interpreted bedrock geology of Western Australia

Citation	
Unique ID	ACC4E458-DBAC-4438-9ED6-HECTFA989710
Title	1:100 000 State interpreted bedrock geology of Western Australia
Jurisdiction	Western Australia
Description	
Abstract	The digital '1:100 000 State interpreted bedrock geology of Western Australia' comprises three layers: the primary 1:10 of Western Australia, with a focus on areas of exposed Archaean and Proterozoic bedrock. The linear structure layer is a Geological Exploration Packages (GEP) for which digital 1:100 000 and 1:250 000 interpreted bedrock geology is available 2016, East Yilgarn 2017, South Yilgarn 2017, Murchison 2017, and Pilbara 2014. Geological interpretation in these packages incorporates profiles, drilling, and previously published and unpublished geological mapping. With the exception of a project areas has not been executed in order to preserve the spatial integrity of the source information. The nomenclature, in-date geological information for the units in question, attribution from the original source is modified to remove superseded. Individual packages are available via the Department of Mines, Industry Regulation and Safety's (DMIRS) eBooks
Search Words	GEOSCIENCES-Geology MINERALS ENERGY-Petroleum INDUSTRY-Mining
Geographic Extent Polygon	-36.00 112.50, -36.00 129.00, -13.00 129.00, -13.00 112.50 13.00 S 112.50 E 129.00 E 36.00 S
Reference System	GDA94
Dataset Currency	
Creation Date	2017-07-01
Publication Date	2018-08-30
Dataset Status	
Status	onGoing
Maintenance and Update	asNeeded

DEPARTMENT OF MINES, INDUSTRY REGULATION AND SAFETY

Spatial Data Infrastructure

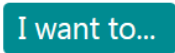
Data Dictionary for Feature Classes

1:100 000 Linear Structures

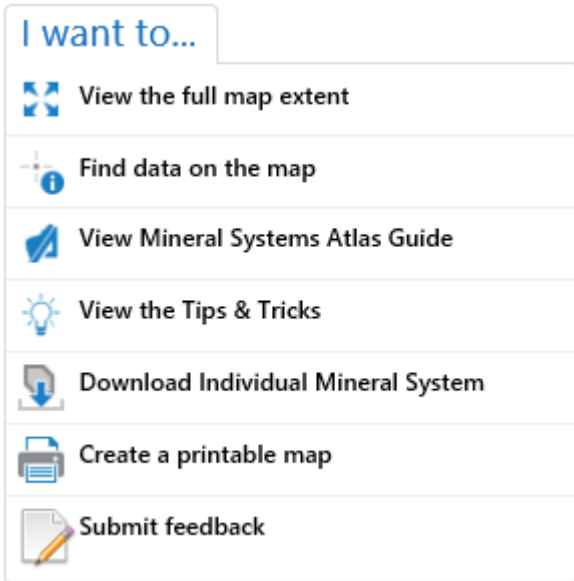
An example of Metadata (left image) and Data Dictionary (right)



The “I want to...” Menu



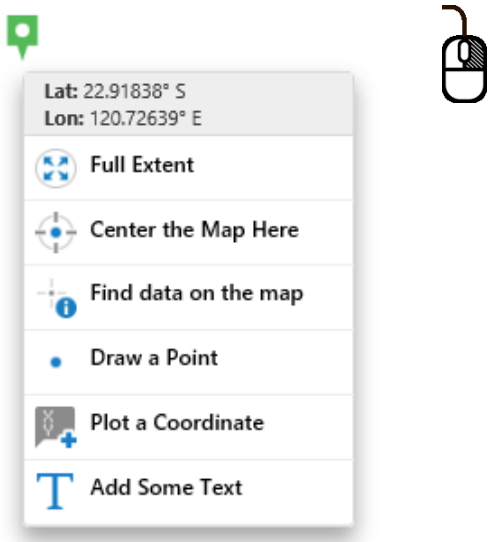
When the map first opens, this menu is a button on the map. When you click the button, the **I want to...** menu displays a list of tools that are used often. Essentially, this menu is a shortcut to the tasks that you are likely to want to do more often than others.



I Want to... menu - open

The Context Menu

The context menu opens when you right-click on the map. The options you see in the context menu may change depending on the map you are using or where on the screen you click.



Context menu options

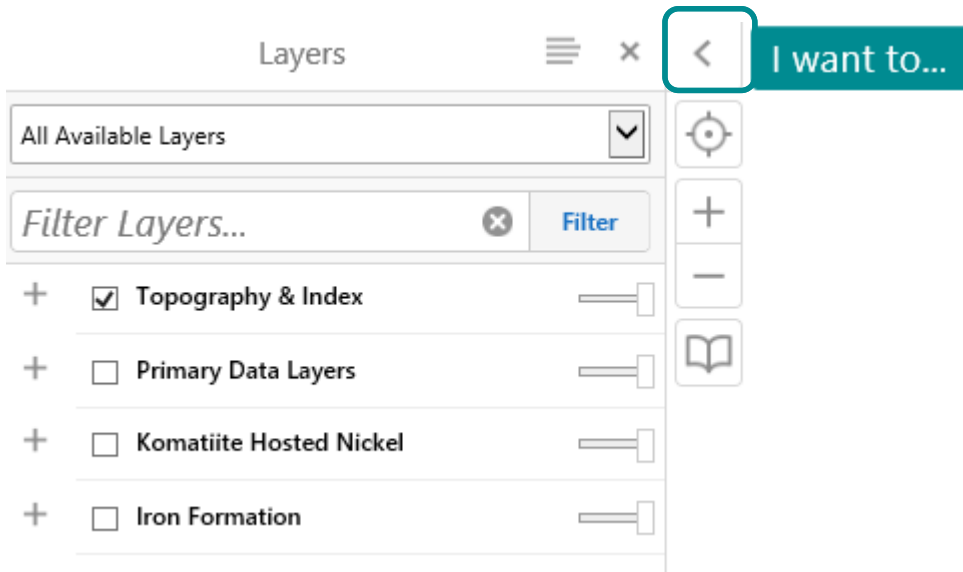
The default options in the context menu include:

- **Full Extent:** Resizes the view to the full extent of the map.
- **Center the Map Here:** Centers the current view of the map at the point that you right-clicked.
- **Find data on the map:** Lists all the features at the point on the map that you clicked.
- **Draw a Point:** Draws a point where you clicked.
- **Add Some Text:** Opens a text box at the place you right-clicked so that you can type in the text you want to add.
- **Plot a Coordinate:** Create a coordinate label at the place you right-clicked.




Open and Close the Information Panel


The information panel displays many different sets of information depending on what you have selected on the map. It displays the results of searches or the list of layers on the map and it is often a gateway to finding more information about the features on the map.



To open the information panel:

Click the arrow to the left of the **I want to...** menu .

To close or hide the information panel:

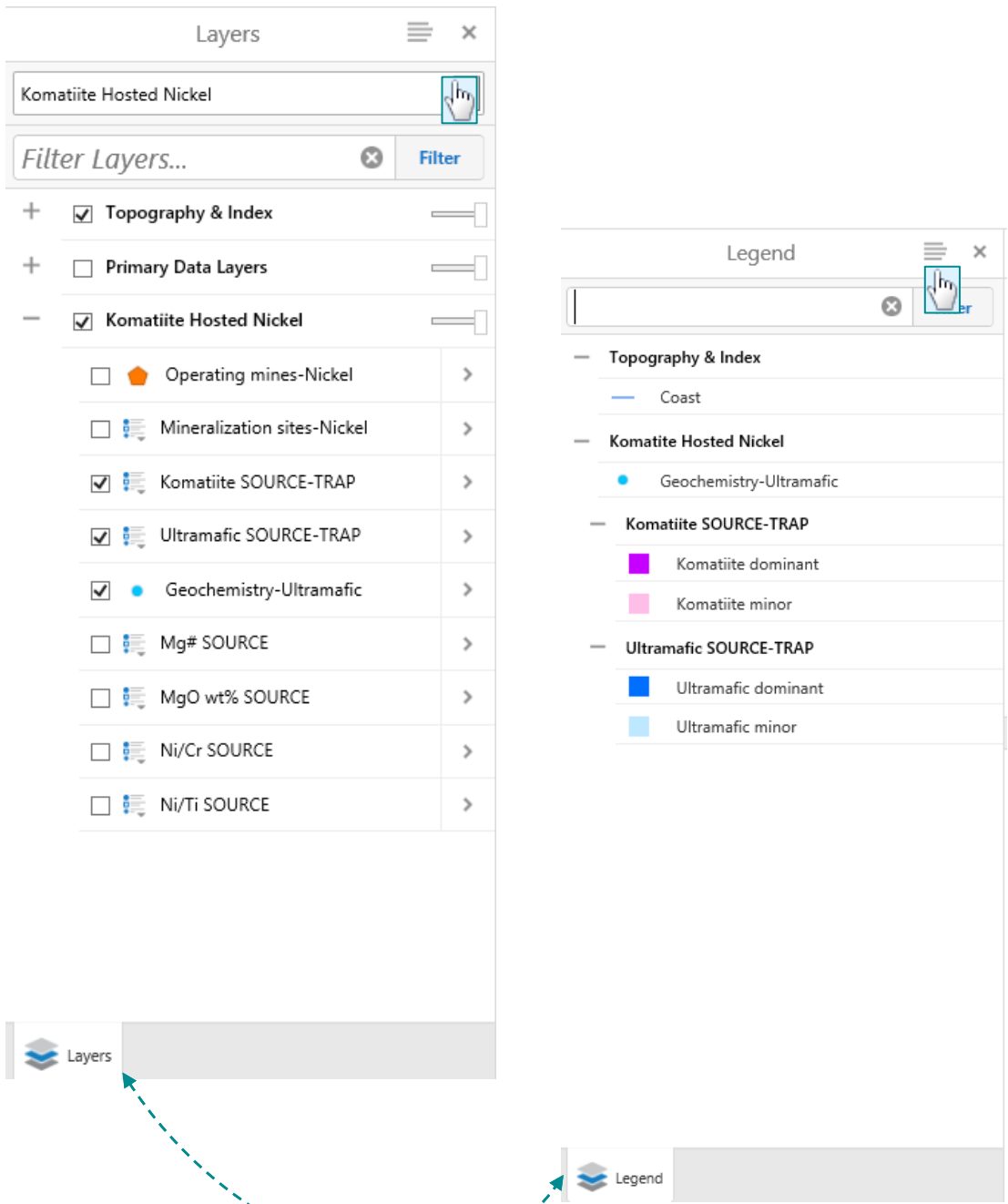
Click the arrow  to the left of the **I want to...** menu.

When you hide the information panel, the data displayed is not deleted so you can refer to it again when you open the panel. When you exit the application completely, the data is cleared from the information panel.



View the Map Legend

You can quickly toggle between the **Map Layers** and the **Map Legend** by clicking the **Panel Actions Menu** and selecting either **Show Legend** or **Show Layer List**.



Map Layers & Legend displayed in the Map Layers panel



Appendix

About GIS and Computerized Maps

What is GIS?

A Geographic Information System (GIS) integrates hardware, software, and data to capture, manage, analyze, and display geographic information. Many organizations use GIS to examine data, answer questions, solve problems and most importantly, make informed decisions in thousands of different situations. For example, government organizations such as DMIRS (Department of Mines, Industry Regulation and Safety) use GIS to track a host of different data from Geological boundaries, Mineral Exploration data to Mining and Petroleum Tenement information and situate this information on maps. One very large benefit of computerized maps is that they can quickly combine information from different sources or layers and display them on the same map.

Example

Let's imagine a Prospector would like to locate his/her Tenement and would like to view all Abandoned Mines, Mines, Deposits and Prospects and some Geology over the area. He/she could create a map with the following layers:

- Tenements Live.
- Abandoned Mines Inventory.
- Mines, Deposits and Prospects.
- 1:500 000 Geology.
- Topography (Towns & Roads).

With this information, it would be possible to quickly locate the Tenement, if there any Abandoned Mines and the location of all existing Mines, Deposits and Prospects. These layers can also be supplemented with the 1:500 000 Interpreted Bedrock Geology of the state and some Topography.

Information in Computerized Maps

The key to understanding how computerized maps work, is to understand how the information in the map is structured.

Layers, Features and Attributes

Information in web-based maps is separated into layers. Each layer can have a different set of information. For example, if you were wanting to keep track of Geological data, you could have one layer that showed Bedrock Geology, and another layer for Linear Structures, and yet another for Tectonic Units.

Each layer of the map has features on it, for example the Linear Structures on the Linear Structures layer and Tectonics on the Tectonics layer. Each single feature (Tectonics) has information about it in the form of **attributes**, for example, what is the name of the Tectonic Unit, it's Lithology, age range, etc. So, although any one unit may be only a polygon on the map, that polygon contains information about all the attributes of that Tectonic Unit. If you think about all the Geology on any map, plus the Geology types, Structures, Bedrock and all their attributes, that is a lot of information.

How is all this information stored in a map? Actually, the information is stored in a database but because this is a computerized map, it can access information from multiple databases if it needs to.

Let's return to the single Tectonic unit and its attributes. If we had to track all the information about a unit, we would enter it in a spreadsheet or database as a single **record**. Each category of information, for example "TECTONIC NAME", is called a **Field**.

Single Record in a Database

TECTONIC CODE	TECTONIC NAME	LITHOLOGY	PARENT NAME
IP-xs-b-PNC	Cadda Terrace	Sedimentary and volcanic rocks	Perth Basin

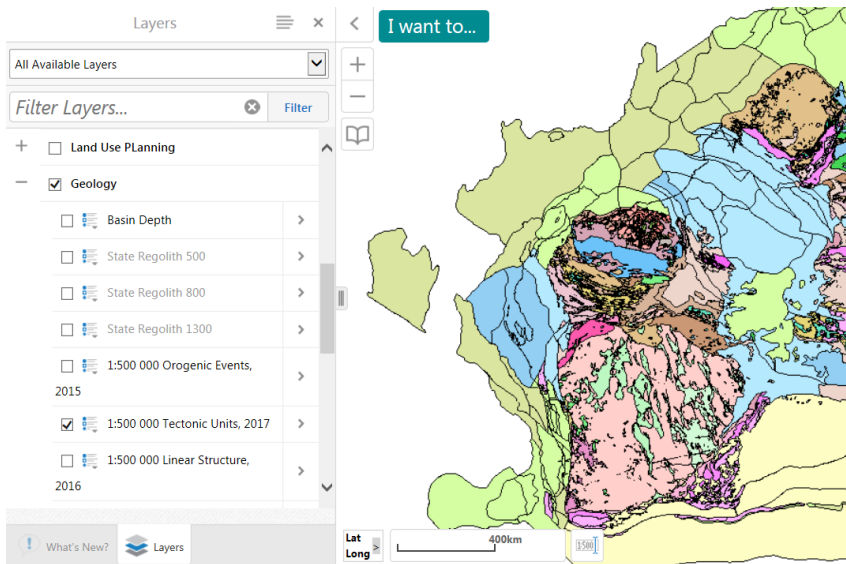
The attributes for a number of Tectonic Units would look like this in the database:

Multiple Records in a Database

TECTONIC CODE	TECTONIC NAME	LITHOLOGY	PARENT NAME
IP-xs-b-PNC	Cadda Terrace	Sedimentary and volcanic rocks	Perth Basin
P_M-xs-b-MO	Moora Group	Sedimentary and volcanic rocks	Pinjarra Orogen
APN-xm-g-YSW	South West Terrane	Igneous and metamorphic rocks	Yilgarn Craton
IP-xs-b-PEE	Beermullah Trough	Sedimentary and volcanic rocks	Perth Basin
IP-xs-b-PND	Dandaragan Trough	Sedimentary and volcanic rocks	Perth Basin



The entire Tectonic units for the state, would look something like this:



Tectonic Units

This ability to add spatial data and information (attributes) is the foundation of GIS. A GIS tells us not just where something is but also *what* it is. Computers make GIS possible as a computer can link maps to a database of information. By using a computer, we can have hundreds of fields (different attributes) for millions of records.

About Web-Based Maps

Paper maps tell you a few things about something on the map but web-based maps are far more powerful, as they allow you to interact with them.

Some of the ways you can interact with a web-based map include:

- Pan and zoom to areas of interest.
- Search for specific features on a map.
- Display additional information about the features shown on a map.
- Measure the length and area of features.
- Make annotations on a map.
- Print and create reports on features and information contained within the map.
- Share your map with others.

As different as this is from a paper-based map, it is just the beginning. Because a web-based map is a computerized map, it is possible to perform complex tasks using the information inside them. Previously, these complex tasks were only possible for people trained to use geographic information systems (GIS) but the arrival of web-based maps like Google and Bing maps has brought this information into the mainstream. So now, instead of using a paper-based map that only tells you a few things about each feature on a map, a GIS can tell you hundreds.

About Map Scales

The Map Scale box and Scale Bar are for reference only, and may not be completely accurate. Without information about the size of your monitor or device, it is impossible to accurately provide a ratio scale. Any scale error is more pronounced if you have a large monitor or a projector with a very low resolution, or if you have a small monitor at a very high resolution. A 17" monitor running at a resolution of 800x600 or 1024x768 represents the scale more accurately.

Some maps have limits on the scales at which you can view the data, and some layers and map labels may only appear at certain scales. If the layer you need is unavailable at your current map scale, zoom in until the layer becomes available.

How Scale Works

When you zoom in, the scale of the map gets larger. A large-scale map covers a smaller land area than a small scale map. A map that is zoomed in to a small town is large scale, whereas a map of Western Australia is small scale.

The reason is that scale is a ratio. In other words, 1:10 means that one unit on the map represents ten units in the real world. In this case - 1:10 - the map is one-tenth the size of the real world. Because it is a ratio, it doesn't matter if the units are centimeters, metres, or any other units. If you have a 1:100 000 map, the map is 1/100 000 the size of the actual place and 1/100 000 is a much smaller fraction (or ratio, or scale) than 1/10. A larger scale equals greater detail.



About Layers

Web maps separate information into layers. This means that you can show or hide information on the map by activating or deactivating layers. It also means that you can have multiple layers of information on a single web map.

A map layer is really a category of information like Operating Mines, Linear Structures or Bedrock Geology. Any information can be represented on a layer but to make it easier to read, the information is represented in simplified abstract ways. For example an Operating Mine would be represented as a point, a Linear Structure as a line and Bedrock Geology as polygons. Like any computerized image, the features on a layer can be represented in two ways - Vector or Raster

Vector Layers

In vector layers, features are usually represented as points, lines, and polygons.



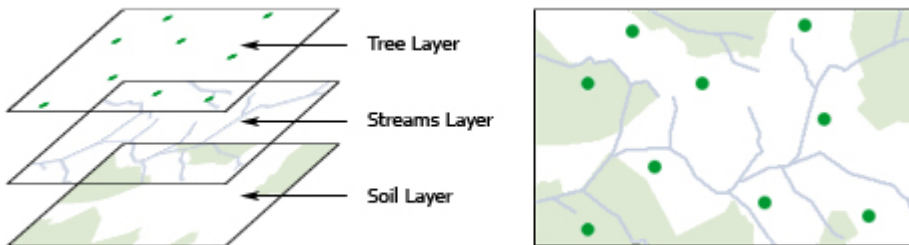
Points: Points are used to show where a feature is when its physical shape is not important (for example, Operating Mines).



Lines: Lines are used to represent features that are continuous (for example, the Linear Structures in a Structures layer).



Polygon: A polygon is a solid, multi-sided shape. Polygons are used to represent features that occupy an area. Everything inside the boundary of the polygon is one record and has the attributes of that record (for example, Bedrock Geology in the 1:500 000 Geology layer).



Vector layers using points, lines and polygons

Some other layer terms are coverages, themes, or shapefiles, which are simply names for a type of layer.

Raster layers

Raster layers are made up of pixels in a grid. Web maps that are images, often have a raster layer, as this is how digital photos are stored. Raster images do not have attributes attached to their features although a pixel can contain a single value like the colour of a roof tile, or the measure of hurricane force at a particular location.



Raster layer made up of pixels

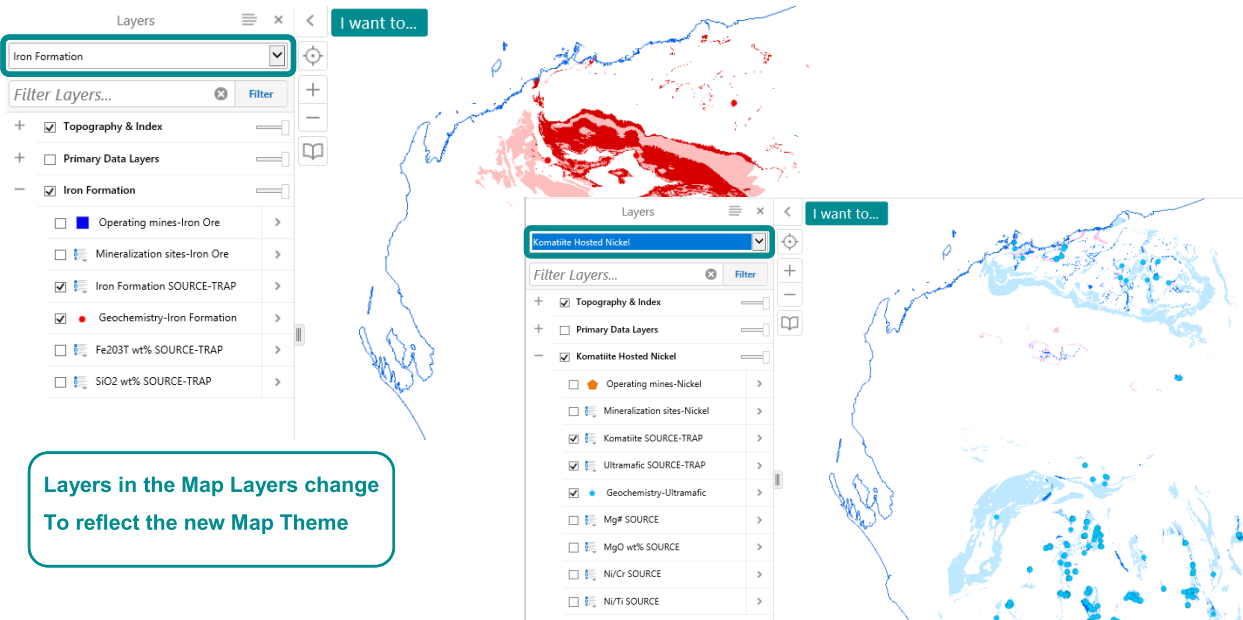
Some base maps look like vector layers but are actually tiled raster images. Tiled images are used because they display faster and deliver a good combination of layers for providing context and orientation. If your base map has raster layers, you cannot turn the layers off and on.



About Map Themes

In some maps, layers that contain similar information are grouped into a specific theme of related data. For example, all the layers that involve Komatiite Hosted Nickel (including Operating mines-Nickel, Mineralization sites-Nickel, Komatiite SOURCE-TRAP and more) could be grouped into a map theme called Komatiite Hosted Nickel. You could also have a Map Theme that shows mostly layers about Commodity Groups (e.g. Ortho-Magmatic). As each map theme may contain a complex set of layers, it saves you the effort of selecting the layers manually, making it possible to quickly switch between very different sets of data.

When you select a map theme, the layers in the Map Layers panel also change. You can still turn layers in a Map Theme on or off as you normally would.



Map Themes make it possible to quickly flip between different predefined layer sets