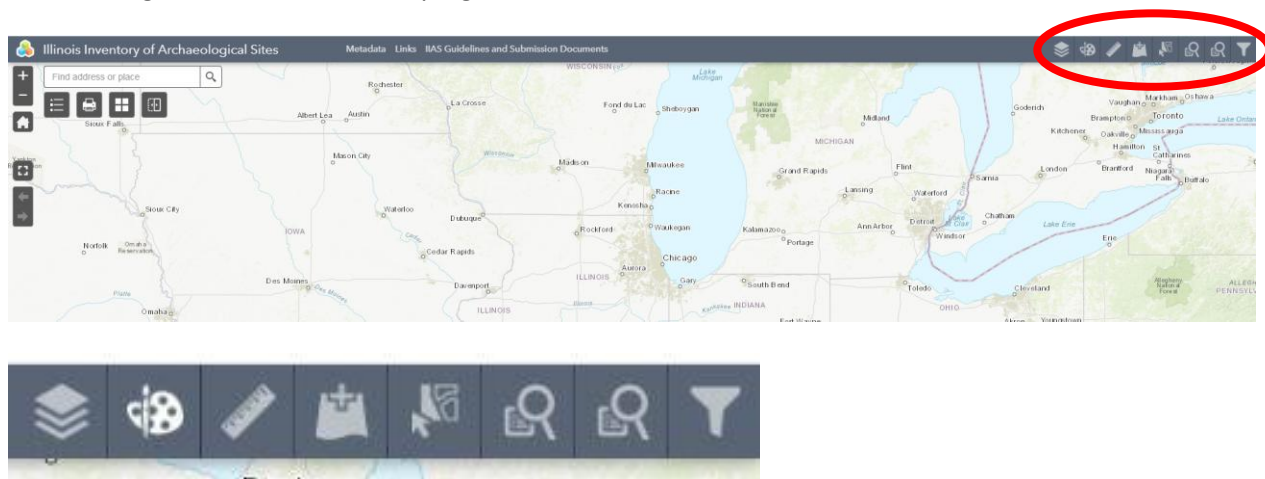


Illinois Inventory of Archaeological Sites Online Viewer User Guide

This guide has been designed to give users a brief overview of available tools and features found in the updated sites viewer. If you need further assistance with viewer or its tools, please contact the Archaeological Site Files at archaeology.sitefiles@illinoisstatemuseum.org or 217-524-0662.

Header Widgets

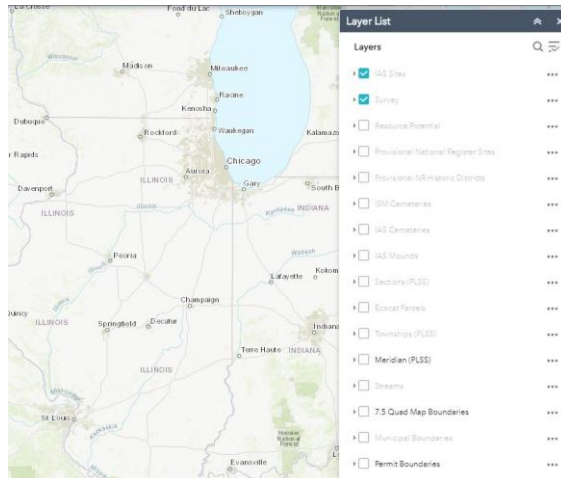
Header widgets are found in the top right of the viewer screen:



1. Layer List



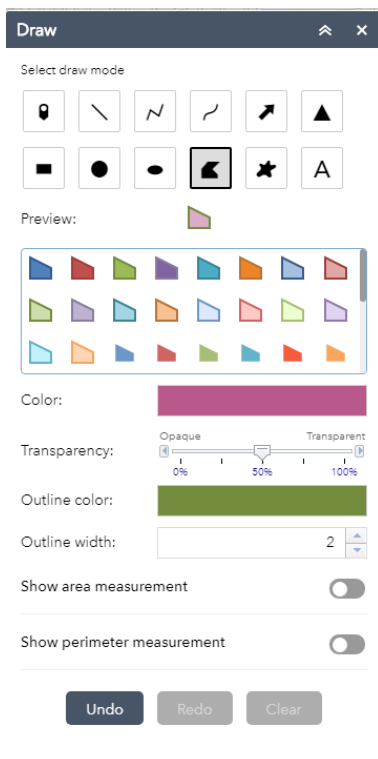
Click on the Layer List widget to display all layers currently loaded into the map viewer. To display a layer check the box to the left of the layer name. Upon opening the map viewer only IAS Sites and Survey layers are turned on. Layers are not visible at every extent or zoom level. Layers names that are grey are not visible at your current extent and you will need to zoom to the appropriate visibility range. Layers available to be viewed at your current extent will have their names displayed in black. Below you can see that when you first open the viewer the IAS Sites and Survey layers are checked, or turned on, but are not yet visible at the current scale. Layers in black, such as Meridian (PLSS) and 7.5 Quad Map Boundaries are visible at this extent if they were to be checked, or turned on.



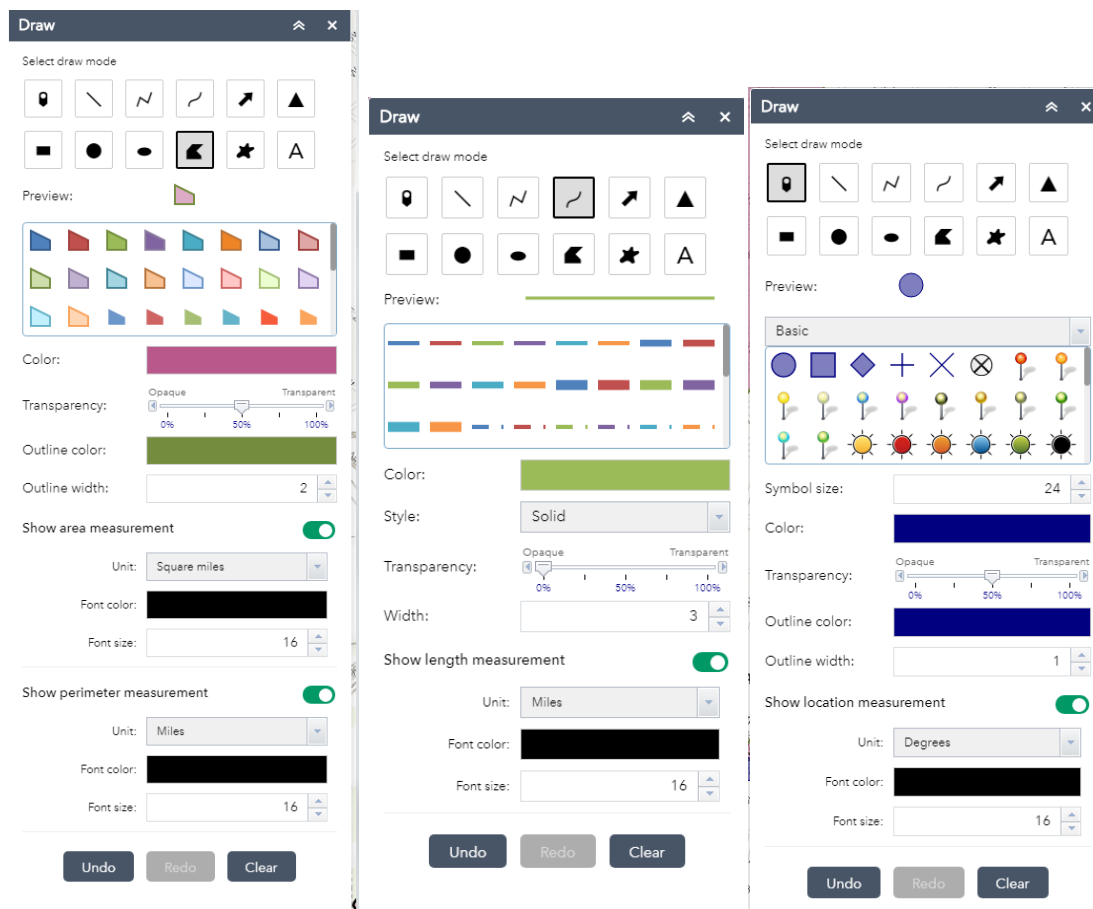
2. Draw



Click on the Draw tool to choose from a number of options to add shapes, point markers, and even text to the map view. Shape attributes like fill color, outline color, outline width, and transparency can be altered to meet your specifications. However, these specifications need to be set before you draw your shape. Buttons to undo, redo, and clear your drawings are also available.



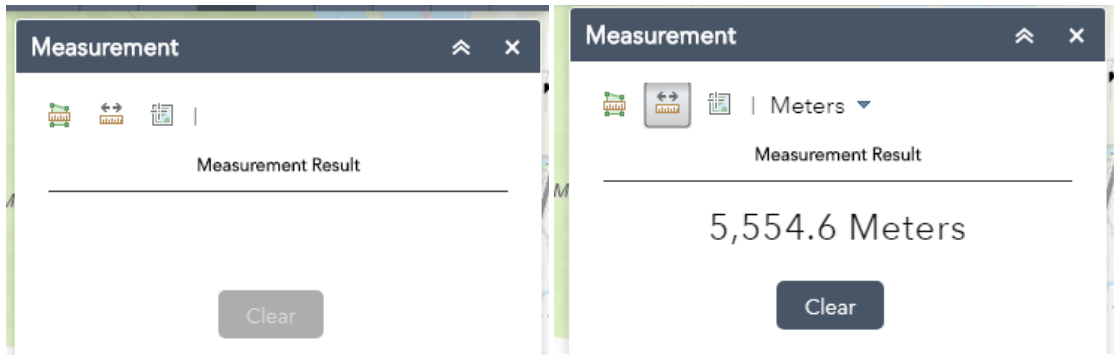
Measurements of your drawn items may be calculated and displayed. To do so, you must click on the show measurement switch to turn it on and set your desired unit of measure before drawing your line or shape, or before placing your point marker. Polygons may have their area and perimeter calculated and displayed. Line lengths may be calculated and displayed, as well point marker coordinates.



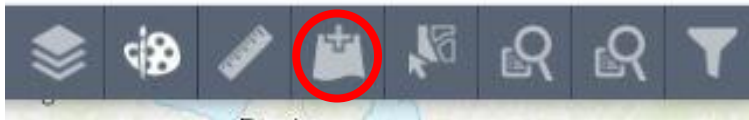
3. Measurement



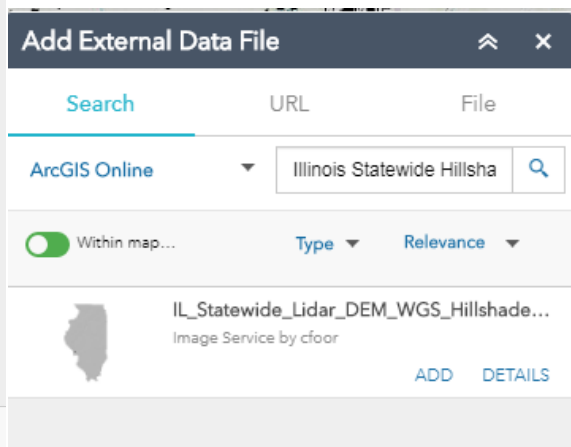
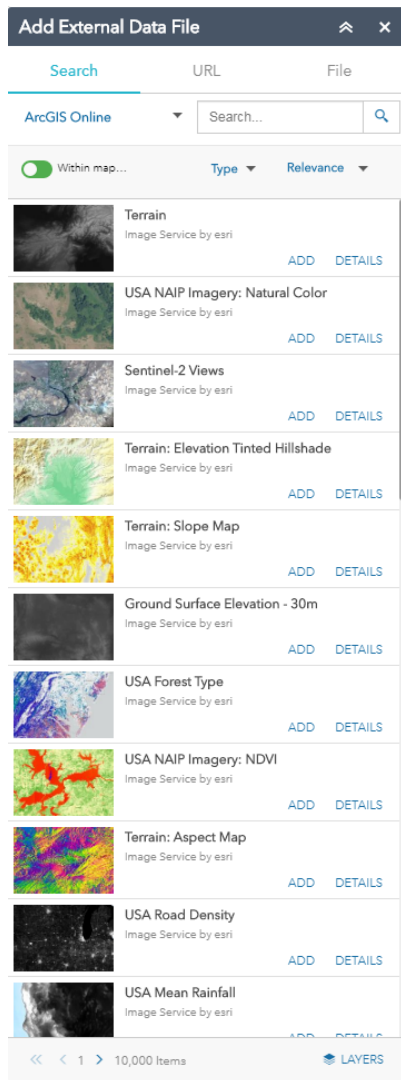
The Measurement tool allows one to draw and calculate area, distance, or location coordinates. Just click on the desired measurement type icon and create a line, polygon, or point. Only one measurement may be displayed at a time. Click on the Use the clear button to remove your polygon, line, or point marker and its associated measurement.



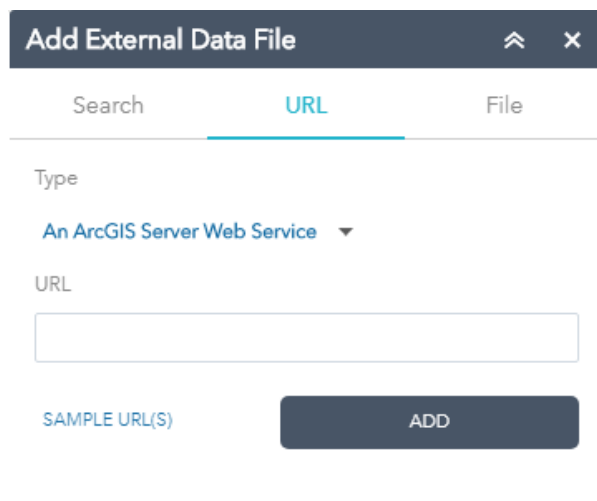
4. Add External Data File



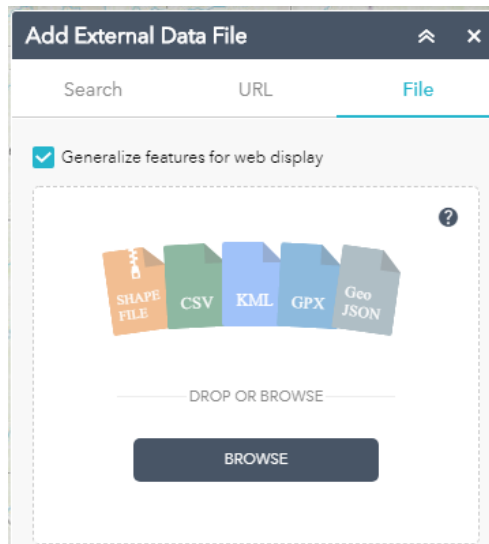
The Add External Data widget is a very useful tool. Clicking on this widget will give you three different options to add external layers and data files to the viewer. The Search tab allows you to search for (or scroll through) and add a number of different map layer services made available by ESRI and other organizations. To limit the layers based on your current map extent, turn on the "Within map" toggle switch. Unfortunately, not all ESRI services are available to regular users. If you try to add an ESRI layer and that you do not have access to, an ArcGIS.com login page will load. Despite this limitation, many map and image services are available to you. One very handy layer made available by the Illinois DNR is the Illinois Hillshade Digital Elevation Model derived from LiDAR data. An easy way to find this layer is to simply enter the search term "Illinois Statewide Hillshade."



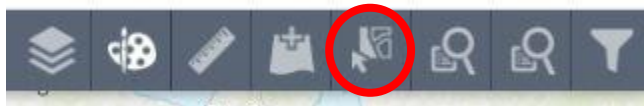
The URL tab allows you to add a map layer service or file from the web via a URL.



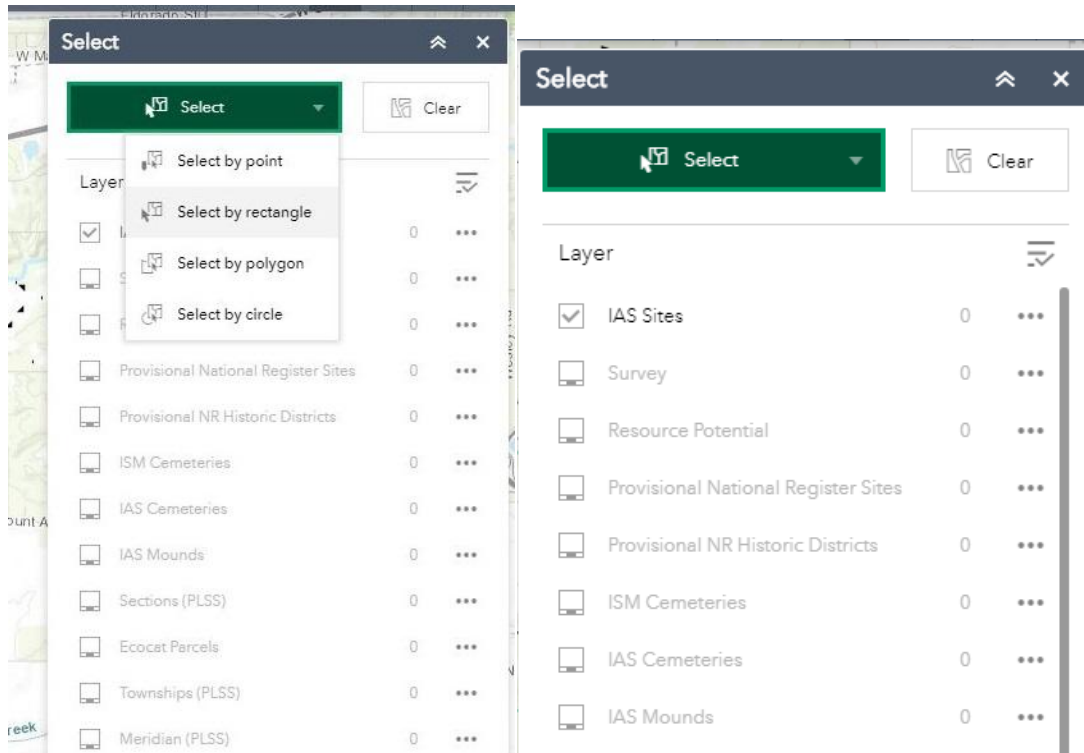
The last tab, File, allows you to browse for and add a file from your computer. Shapefiles, CSV, KML, GPX, and GeoJSON files are all valid file types. However, shapefiles must be zipped to a compressed folder first and the zip file itself is what you will upload to the viewer. External files uploaded to the viewer are only visible to the uploader and are not maintained once the viewer session has ended. Uploaded external data files may be used in spatial relation queries and in the spatial filters found within the Query by Attribute widget. Thus, one can upload their project area and then select all sites and surveys that intersect with that area. The tabular data for these sites may then be exported to CSV.



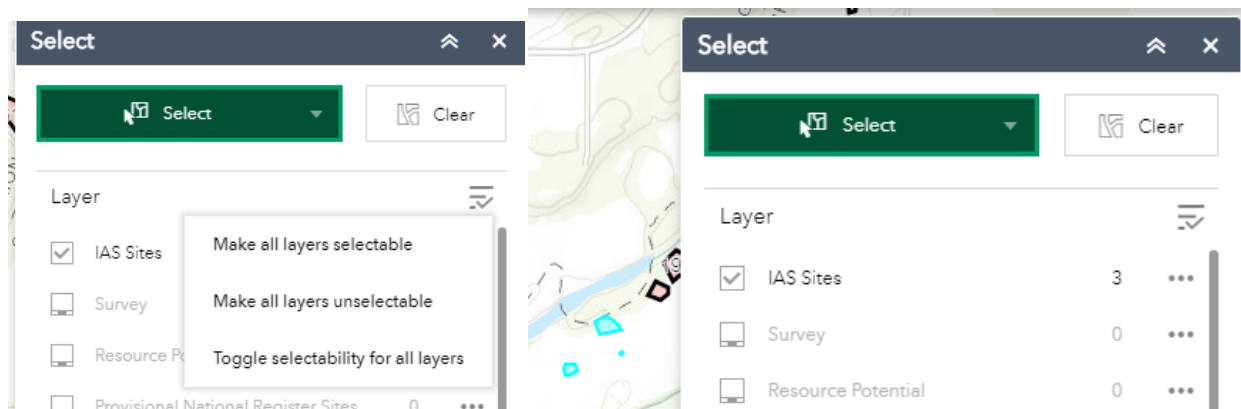
5. Select



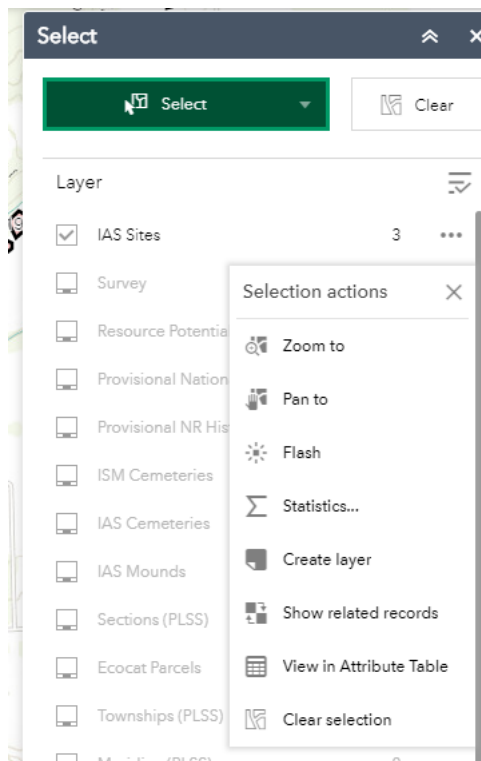
The Select tool is used to select map features using a selection shape or point. After opening the Select tool you first need to decide which selecting option you will use. The default is a rectangular selector, but point, polygon, and circle selections are also available. Like the Layers List, only layer names in black are possibly selectable. Additionally, you must check the box to the left of the layer name to turn on a layer for selection. In the example below, IAS Sites is the only available layer to select from (because it is the only layer turned on in the Layer List), and since its box is checked it is ready to have features hand selected.



The lines with a check mark to the right of the Layer heading can be clicked on to make all layers selectable (remember they must still be turned on in your Layer List), make all layers unselectable, or to toggle the selectability of all layers. Once features are selected, they will be highlighted in cyan, and the number of features selected will be listed next to the layer name.



After selecting features, you may then click on the three dots to the right of the feature count and select from a number of options:



Please note that the IAS Sites layer is the only layer with related records, which are held in the IAS Data table. Viewing the IAS Sites attribute data provides the locational data on the site, the most current extent, the drainage basin, soil association, and a summary of reported time periods and site types. Viewing the related records of the IAS Sites layer will provide you with the specific data reported by surveyors during their visits to those sites.

Below is a view of the IAS Sites selection attribute table:

IAS Sites													
Survey ISM Cemeteries IAS Cemeteries IAS Mounds IAS Data													
Options Filter by map extent Zoom to Clear selection Refresh													
Shape	CTY	CTY_ID	QUAD	MERIDIAN	TWPNUM	TWPDIR	RNGNUM	RNGDIR	SECTION	LATITUDE	LONGITUDE	LAST_EXTEN	SOILA
	CN	188	Mt. Auburn	3	16	N	2	W	25	39.80	-89.26	6.604	Sawm Genes
	CN	115	Mt. Auburn	3	16	N	2	W	25	39.80	-89.26	117	Sawm Genes
	CN	454	Mt. Auburn	3	16	N	2	W	25	39.80	-89.26	3.063	Sawm Genes

Here are the related records to these selected sites:

COUNTY	CTY_ID	FIELDNO	NAME	ALT_NAMES	RECORDED	REVISIT	OWNERSHIP	TOPOGRAPHY	STREAM	ELEVATION	PROJECT	PROJECT_TYPE	VISIBILITY	EXTENT	GROUND_COVE
Christian	188	CNv128			1985.05.16	N	Private	Floodplain	SANGAMON RIVER	168	SANGAMON SURVEY		0	140	Bare
Christian	115	CNv129	Scholes Site #1		1975.10.23	N	Private	Floodplain	SANGAMON RIVER	168	HSS Sang. River		0	149	Bare
Christian	454				2000.12.18	N	Private	Floodplain	Sangamon River	174	Illioapolis Well #2		90	3,030	Cultivated

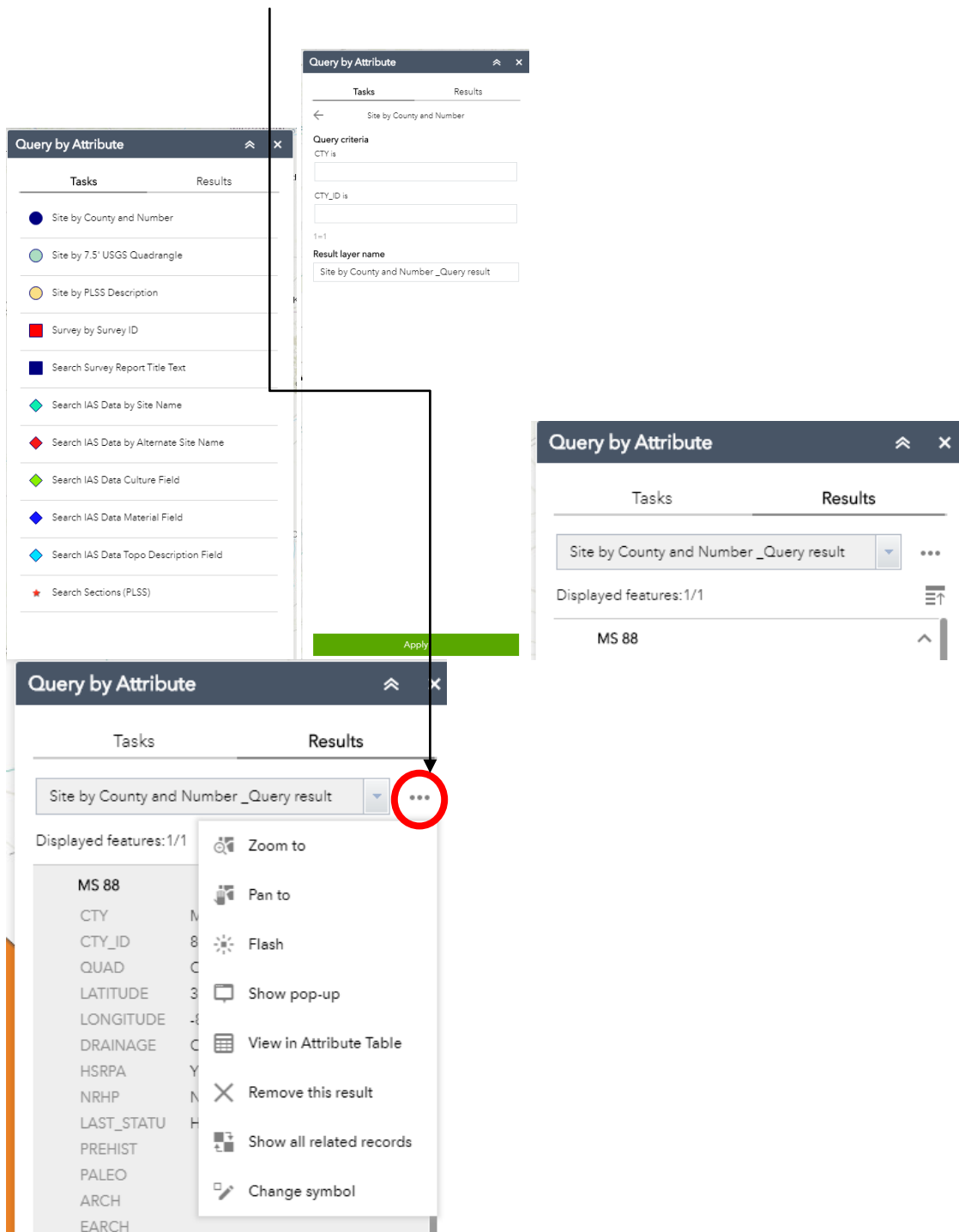
While we do not allow selected features to be exported as shapefiles, data contained in these attribute tables may be exported to a CSV by going to Options – Export all to CSV

6. Query by Attribute

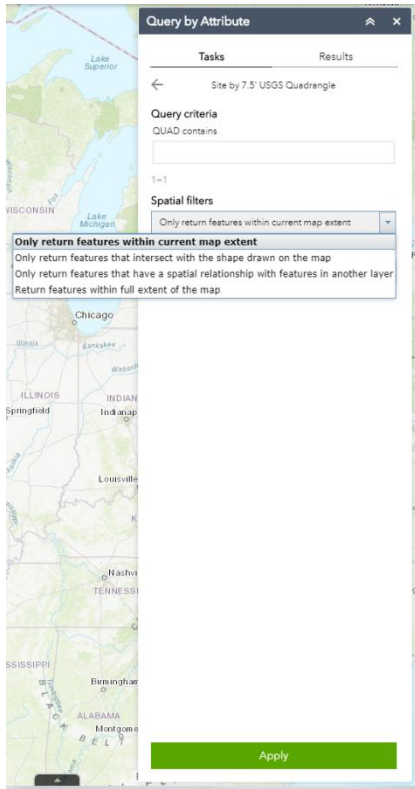


The Query by Attribute tool allows you to conduct a number of structured queries on the IAS Sites, Survey, and PLSS Section layers and the IAS Data table. Site queries are: Site by County and Number, Site by 7.5' USGS Quadrangle, and Site by PLSS Description. Possible Survey queries are: Survey by Survey ID and Search Survey Report Title Text. A Search of PLSS sections is also available with the query Search Sections (PLSS). A number of queries on the IAS Data table are also possible. At this time, you may choose from the following data table queries: Search IAS Data by Site Name, Search IAS Data by Alternate Site Name, Search IAS Data Culture field, Search IAS Data Material Field, and Search IAS Data Topo Description field.

To complete a query by attribute, simply click on the desired query, fill in your desired values, and click Apply. Here, you will also have the option to create a custom layer name for the query result. All executed queries can then be accessed by clicking on the Results tab. When a query is executed a graphical layer of the results will appear in the Layer List so that you may go back to it. You may also return to executed queries by clicking on the Results tab of the Query by Attribute box. Query results generated will not be saved and will only appear in the viewer instance where they are created. As with the native layers, you may open these results up in an attribute table and use the Export all to CSV option. Additional options related to your query may also be accessed by clicking on the three dots to the right of the desired query.



Some queries will also allow you to limit results by using spatial filters. If you do not wish to use a spatial filter be sure to select the option "Return features within full extent of the map." The other available option related to map extent is "Only return features within current map extent."

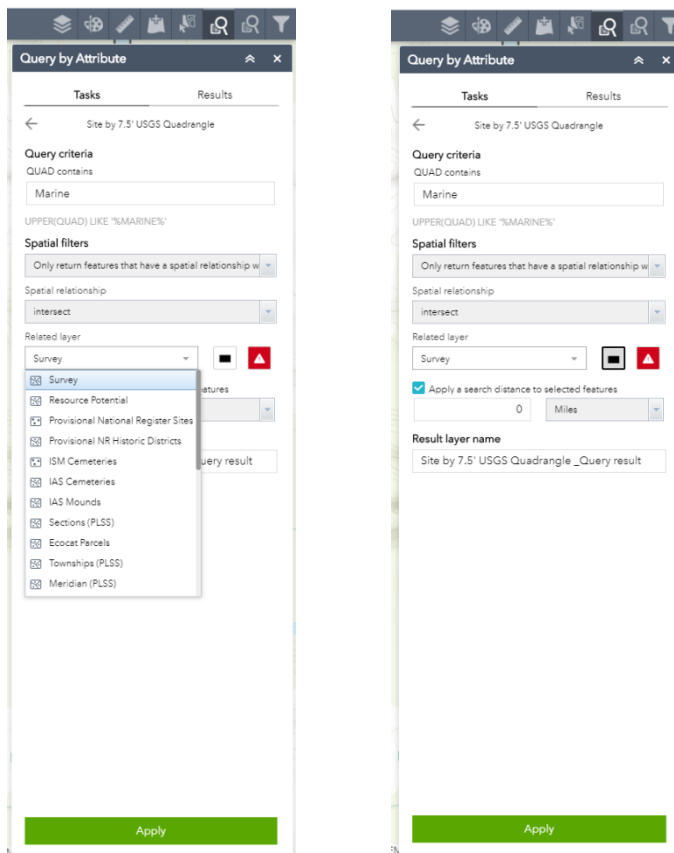


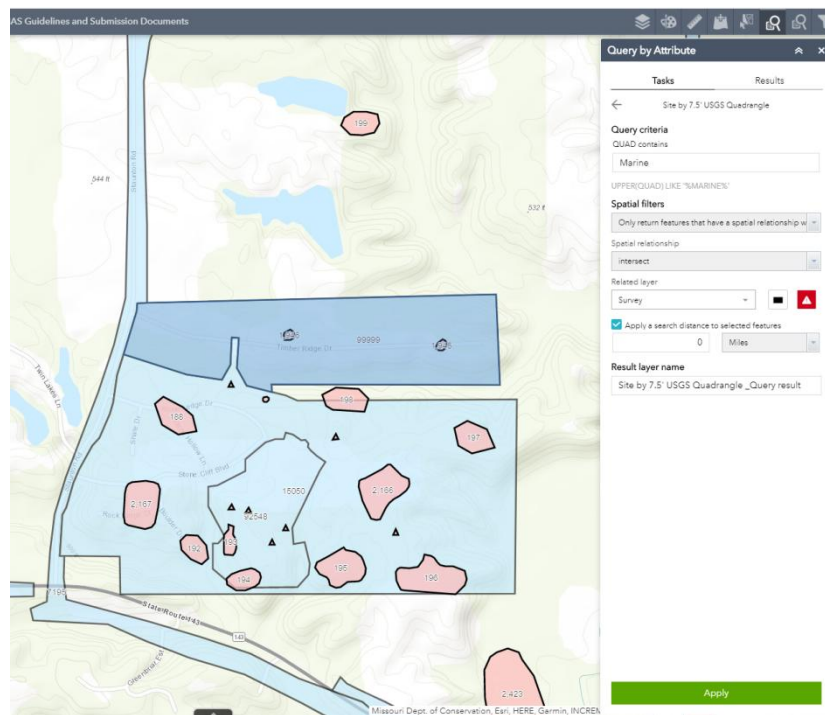
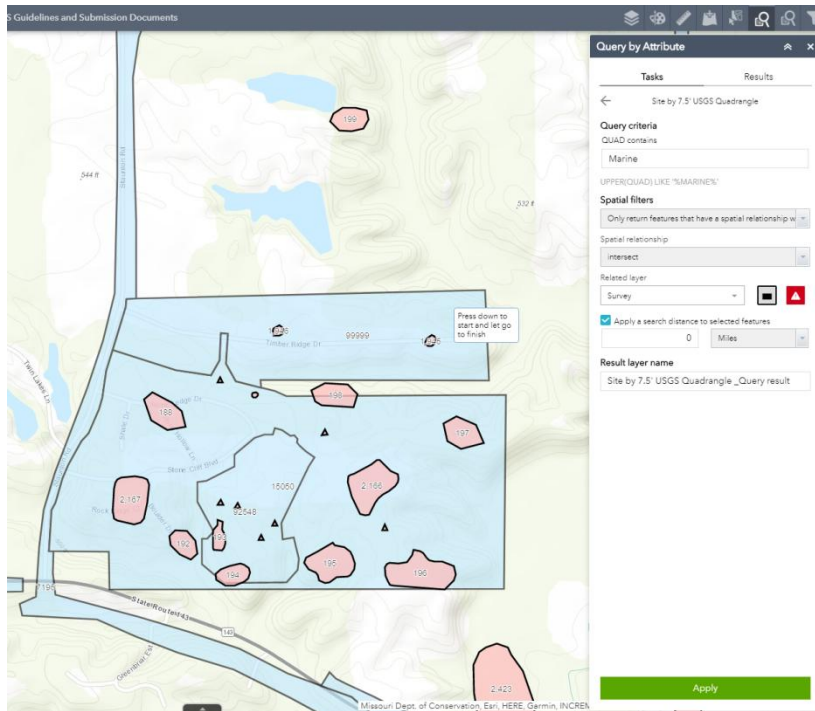
Another possible spatial filter is "Only return features that intersect with the shape drawn on the map." To execute a query using this spatial filter you first need to select your desired draw tool, decide if you would like to maintain the shape after the query is executed, decide if you would like to use a buffer, or extra search distance to your shape, draw your shape, and hit the Apply button.

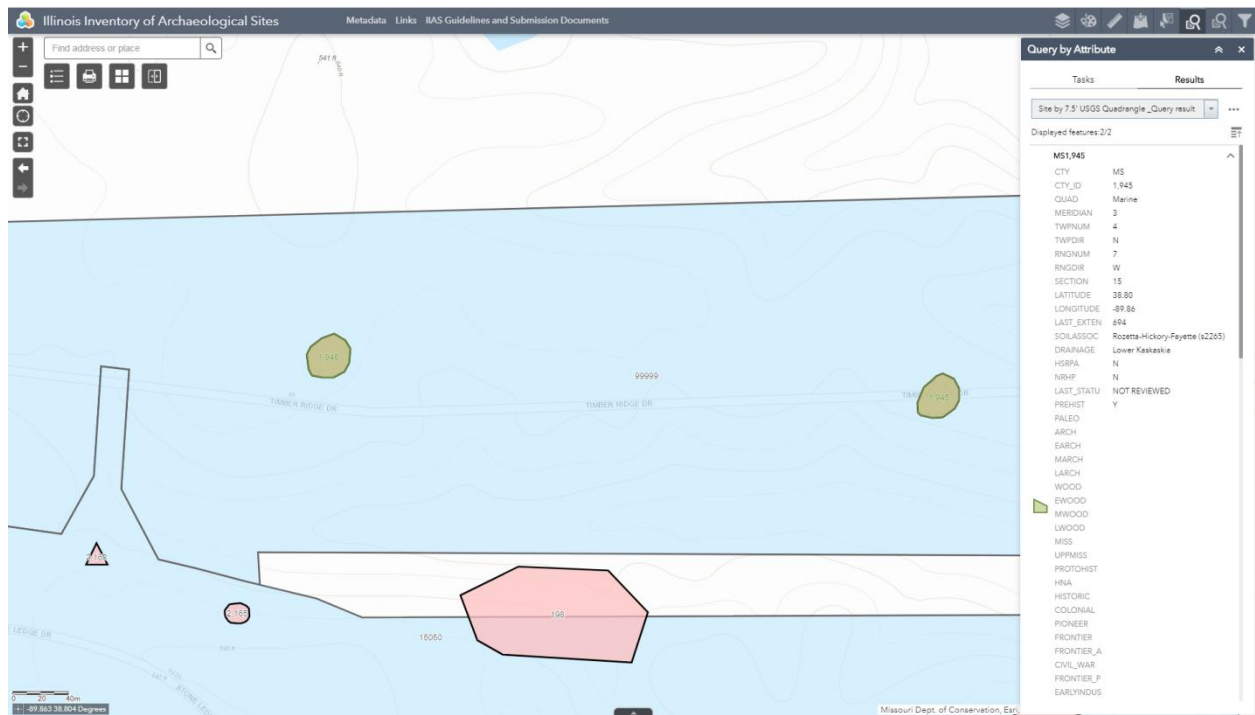




If you choose the option "Only return features that have a spatial relationship with features in another layer," then you must first select the desired layer in the dropdown list, decide if you would like to use a buffer, or extra search distance to your shape, click on the black rectangle, and use the rectangle to manually select features within that other layer that you wish to run the intersect on. Following selection, your selected feature in the related layer will be highlighted in a dark blue, as opposed to bright cyan, the selection color of the selections made with the standalone selection tool. After making your selection, hit Apply to see the results.





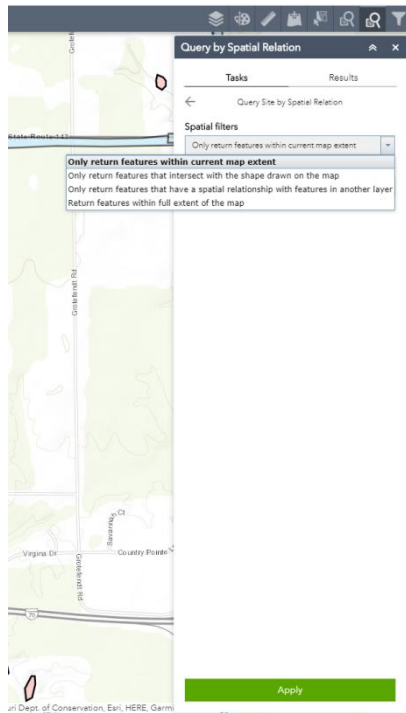


7. Query by Spatial Relation



The Query by Spatial Relation widget works in the same way the as the spatial filters in the Query by Attribute tool and will not be discussed in detail. Spatial queries can be applied to sites or surveys. Like the spatial filter in the Query by Attribute tool, uploaded external data, such as project limits, may be used to query sites and surveys. When executing a spatial query the results will appear in the Layers List and in the Results tab. The available spatial queries are:

- 1) Only return features within current map extent
- 2) Only return features that intersect with the shape drawn on the map
- 3) Only return features that have a spatial relationship with features in another layer
- 4) Return features within full extent of the map



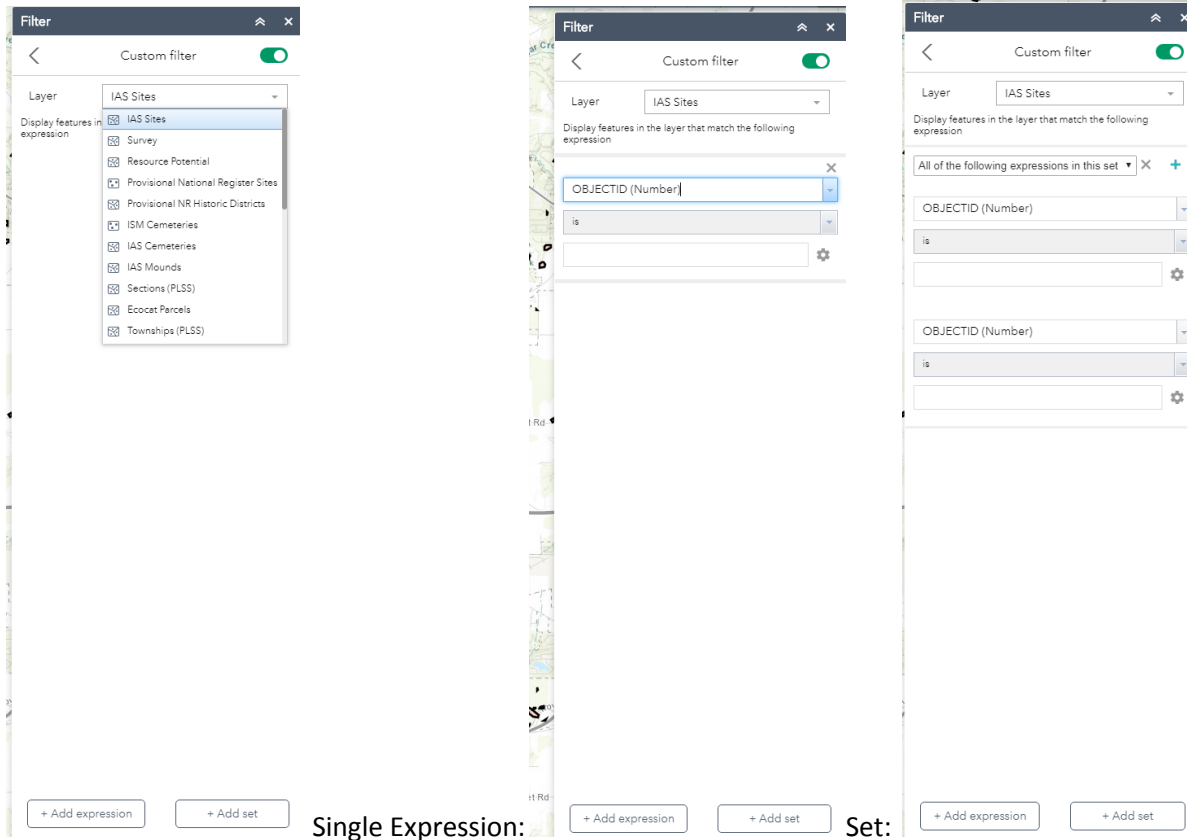
8. Filter



The Filter widget is a particularly handy widget that allows the user to create custom filters to apply to any layer, with the exception of query generated and external layers. To create a custom filter, click on the Filter widget to open the Filter panel. In the empty panel, look to the bottom right and click on the "Create a custom filter" icon.



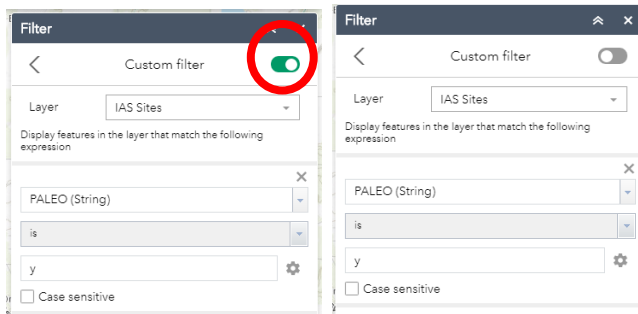
Next, select the Layer that you would like to filter and click on "+ Add expression" to add a single expression, or click "+ Add set" to add a compound expression.



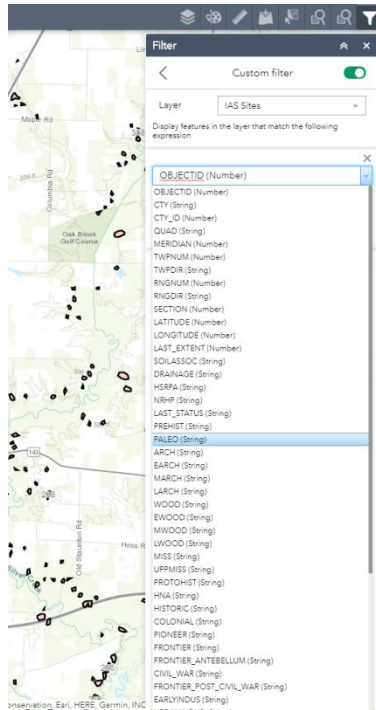
Please note that you may add multiple single expressions to create a compound filter. When using a set of filters or multiple single expressions you have two options regarding how the expressions will be applied to the data layer:

- 1) All of the following expressions in this set are true
- 2) Any of the following expressions in this set are true

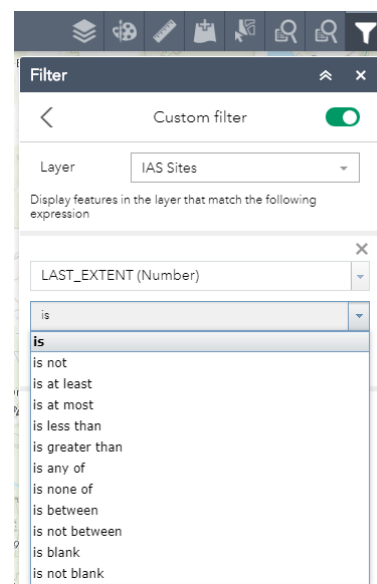
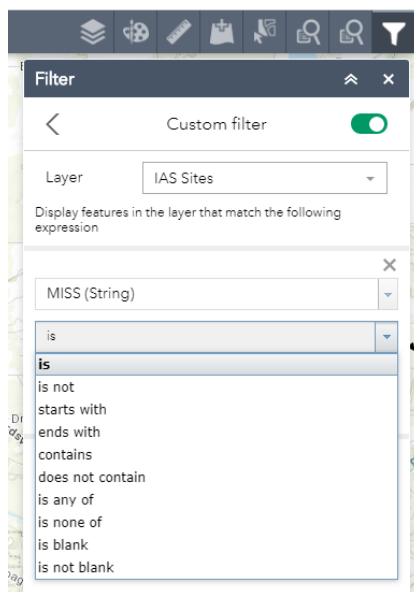
As soon as expressions are completed they will be evaluated and you will see the data filtered in the display. This data filter will stay active until you click on the green toggle button to the right of the custom filter header and turn it off.



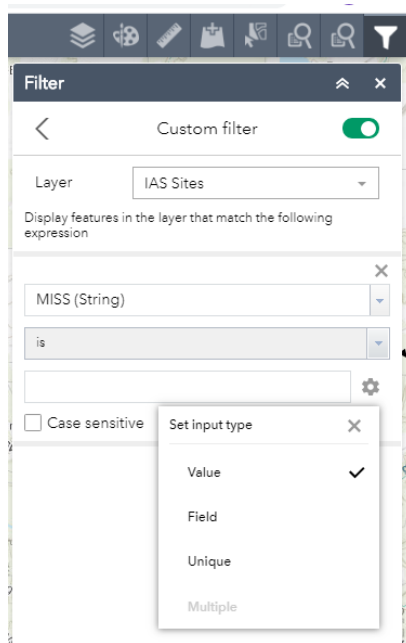
When developing your custom filter, each expression is a three step process. First, you must select the desired field to use:



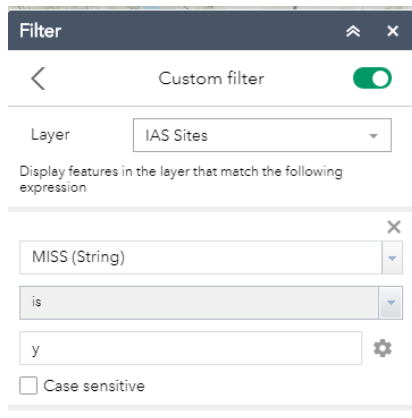
Next, the must select your desired operator. Available operators are based on the field type of your selected field. For string fields, the following operators are available: is, is not, starts with, ends with, contains, does not contain, is any of, is none of, is blank, and is not blank. Operators available for numeric fields are: is, is not, is at least, is at most, is less than, is greater than, is any of, is none of, is between, is not between, is blank, is not blank.



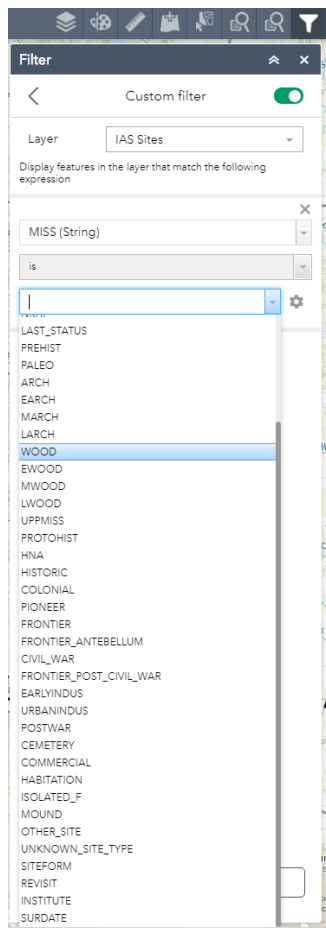
Lastly, you must set the input type of the operand. For string and numeric fields operands may have an input type of Value, Field, or Unique.



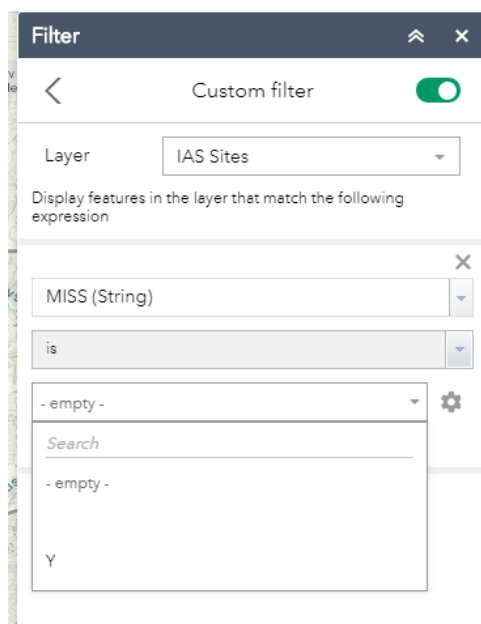
When the input type is set to Value, the user must enter a value. You may also choose to make the value evaluation case sensitive.



If the value type is set to Field the filter will compare values from one field to values of the other, and only features with matching values between the two fields will be displayed.



The final value type is Unique. When Unique is selected a dropdown list of all unique values in the dataset will be generated. This list may take a few moments to generate and load. Case sensitivity may also be set in the Unique option.



Here are a few examples of custom queries.

- 1) Filter to display only sites reported as a habitation site and have a reported Mississippian component:

The screenshot shows a 'Filter' dialog box for the 'IAS Sites' layer. The 'Custom filter' toggle is turned on. The layer is set to 'IAS Sites'. The instruction says 'Display features in the layer that match the following expression'. The expression is built using two conditions joined by 'AND'. The first condition is 'MISS (String) is Y' with 'Case sensitive' unchecked. The second condition is 'HABITATION (String) is Y' with 'Case sensitive' unchecked.

- 2) Filter to display only sites with reported Mississippian component and a reported Upper Mississippian component:

The screenshot shows a 'Filter' dialog box for the 'IAS Sites' layer. The 'Custom filter' toggle is turned on. The layer is set to 'IAS Sites'. The instruction says 'Display features in the layer that match the following expression'. The expression is built using two conditions joined by 'AND'. The first condition is 'MISS (String) is Y' with 'Case sensitive' unchecked. The second condition is 'UPPMISS (String) is Y' with 'Case sensitive' unchecked.

- 3) Filter to display only sites with a reported Mississippian component OR a reported Upper Mississippian component:

The screenshot shows a 'Filter' dialog box for the 'IAS Sites' layer. The 'Custom filter' toggle is turned on. The layer is set to 'IAS Sites'. The instruction says 'Display features in the layer that match the following expression'. The filter type is 'Any of the following expressions in this set'. There are two expressions: 'MISS (String) is Y' and 'UPPMISS (String) is Y'. Both expressions have a 'Case sensitive' checkbox that is unchecked.

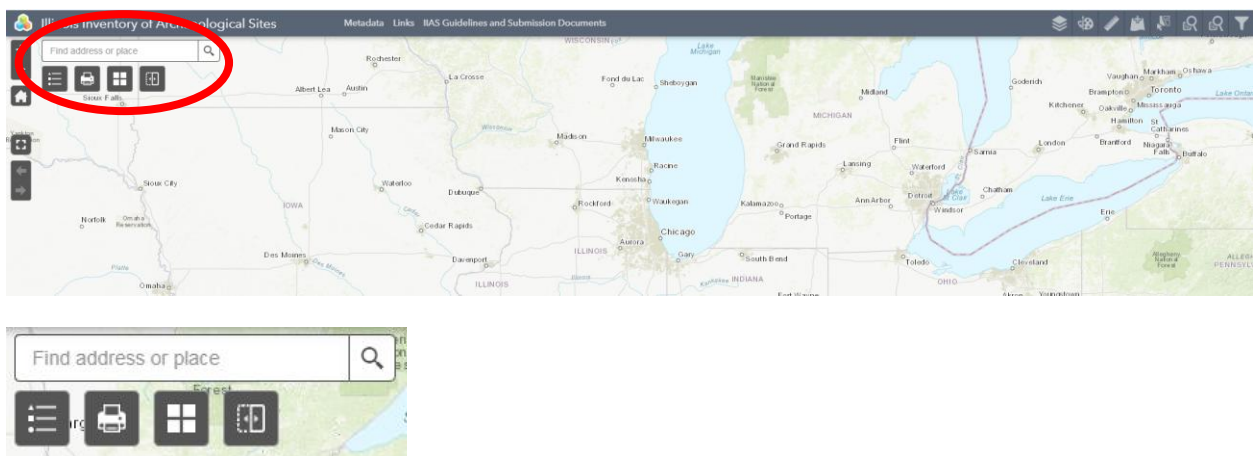
- 4) Filter to display only sites with reported Mississippian component and NO reported Upper Mississippian component:

The screenshot shows a 'Filter' dialog box for the 'IAS Sites' layer. The 'Custom filter' toggle is turned on. The layer is set to 'IAS Sites'. The instruction says 'Display features in the layer that match the following expression'. The filter type is 'All of the following expressions in this set'. There are two expressions: 'MISS (String) is Y' and 'UPPMISS (String) is not Y'. Both expressions have a 'Case sensitive' checkbox that is unchecked.

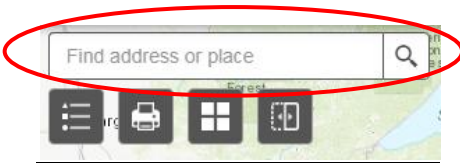
- 5) Filter to display sites reported as a cemetery, with a reported Frontier component, and a current extent that is greater than 500 square meters:

Non-Header Widgets

Non-header widgets are found near the top left of the viewer screen, just below the viewer title:

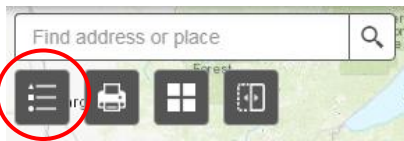


1. Search

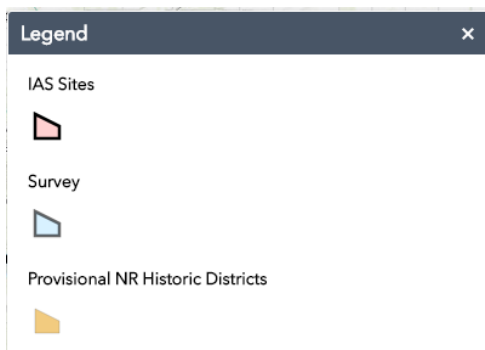


Use the search widget to find and navigate the map to an address or place. The Search widget uses the ArcGIS World Geocoding Service.

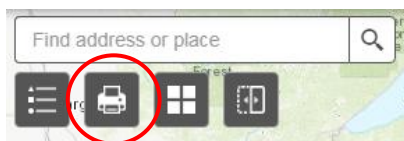
2. Legend



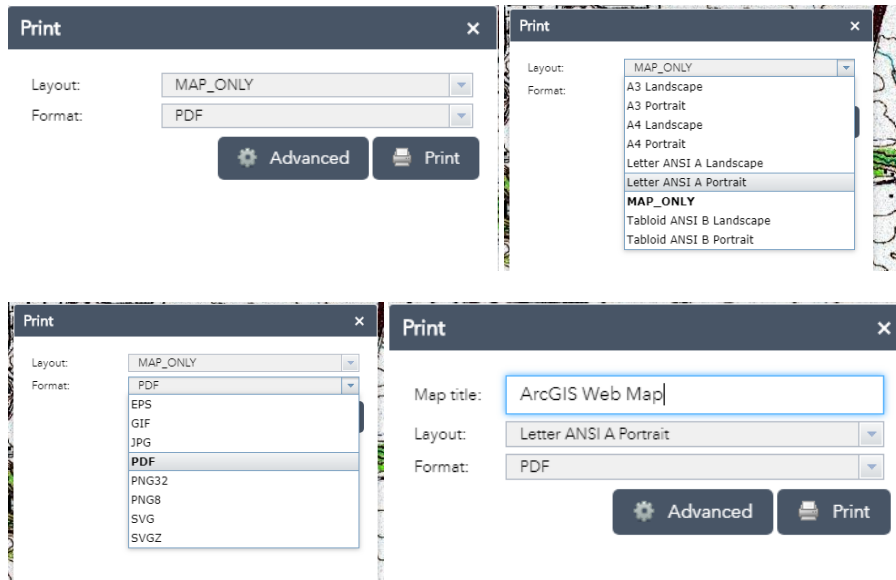
Click on the Legend widget to open a legend that displays the symbology of all active layers, including query layers.



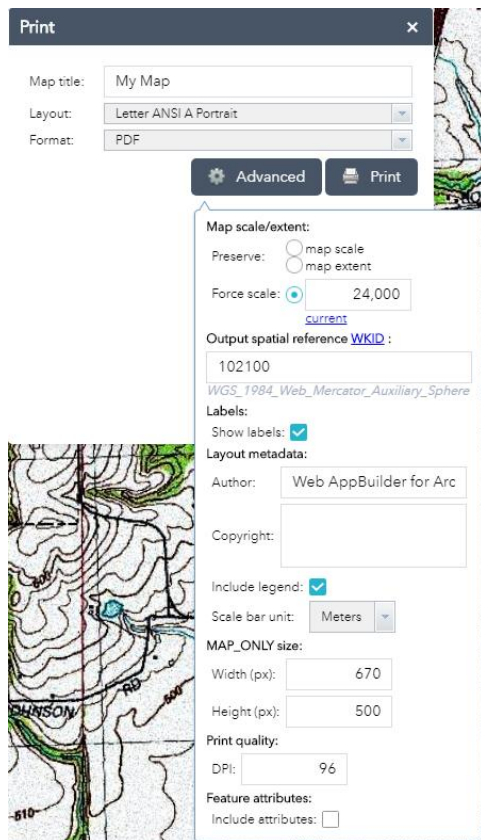
3. Print



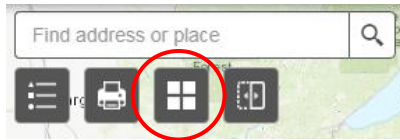
Click on the Print widget to open the print dialog box. Set the layout and file format you desire. If you choose the Map Only layout, no frame, labels, legend, or scale bar will be added. For non-Map Only prints, you may also add a title to your map in the print box.



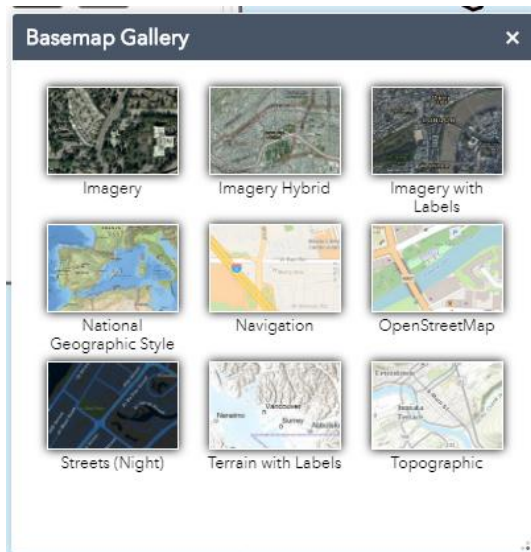
Advanced print options are also possible, such as setting the scale, output spatial reference, adding labels, setting the scale bar unit, setting the map image size, and print quality. To generate a digital map to download, simply hit the Print button and a new tab will open in your browser displaying the map that you may then download.



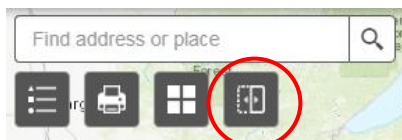
4. Basemap Gallery



Click on the basemap widget to change the basemap (background) of the viewer.



5. Swipe

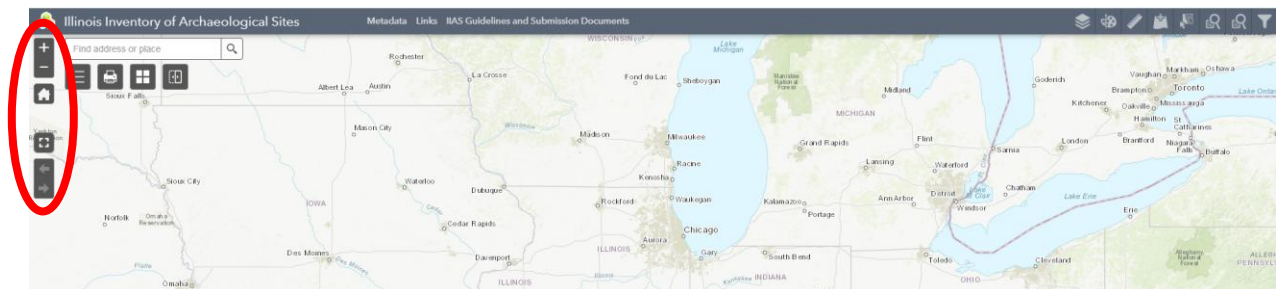


The swipe button is used to compare layers on the map to one another. This widget is particularly useful comparing the location of structures found on historic plats with the modern landscape. To use the Swipe tool, click on the Swipe widget and set the swipe layer. The default swipe layer is IAS Sites, but any visible layer may be chosen. When the swipe widget is active a vertical swipe bar will appear. You may then drag the swipe bar to the left or right. When moving to the left, the swipe layer will disappear from the screen. When moving the swipe bar back to the right, the layer will reappear.



Extent and Screen Control Widgets

Extent and Screen Control widgets are found on the far left top of the viewer screen:





1. Zoom Controls

Click on the plus (+) to zoom in on the map, or press the minus (-) button to zoom out.



2. Default Extent

Click on the Default Extent button to return the map to its default extent or view.



3. Full Screen

Click on the Full Screen widget to open up a full screen view of the web map application. Press the escape key to exit the full screen display.



4. Extent Navigator

You can use the extent navigator widget to go back to the previous and next map extents, or views. Click on the arrow pointing left to go to your previous extent, and click on the right pointing arrow to move forward to the next extent.

