Chapter 6

Building Maps with ArcGIS Online

Summary: ArcGIS Online is an on-line mapping software that allows you to upload tables with latitude and longitude geographic coordinates to create map layers that can then be combined with other features, or linked to other layers and base maps. Like Fusion Tables, you can publicly share and then embed them into your stories. Unlike Fusion Tables, ArcGIS visualizations can be sized to suit the device of your choosing. There are many other advantages. For instance, you can turn layers on and off, use different kinds of base maps, create actual stories with maps using photographs, and use a greater variety of options to make your visualizations come to life. In short, ArcGIS is an extremely versatile online tool worth taking the time to learn.

ArcGIS Online was developed by ESRI, a North American company that has a large influence in the world of mapping software and is the home of something called GIS (Geographic Information Systems).

What you will learn:

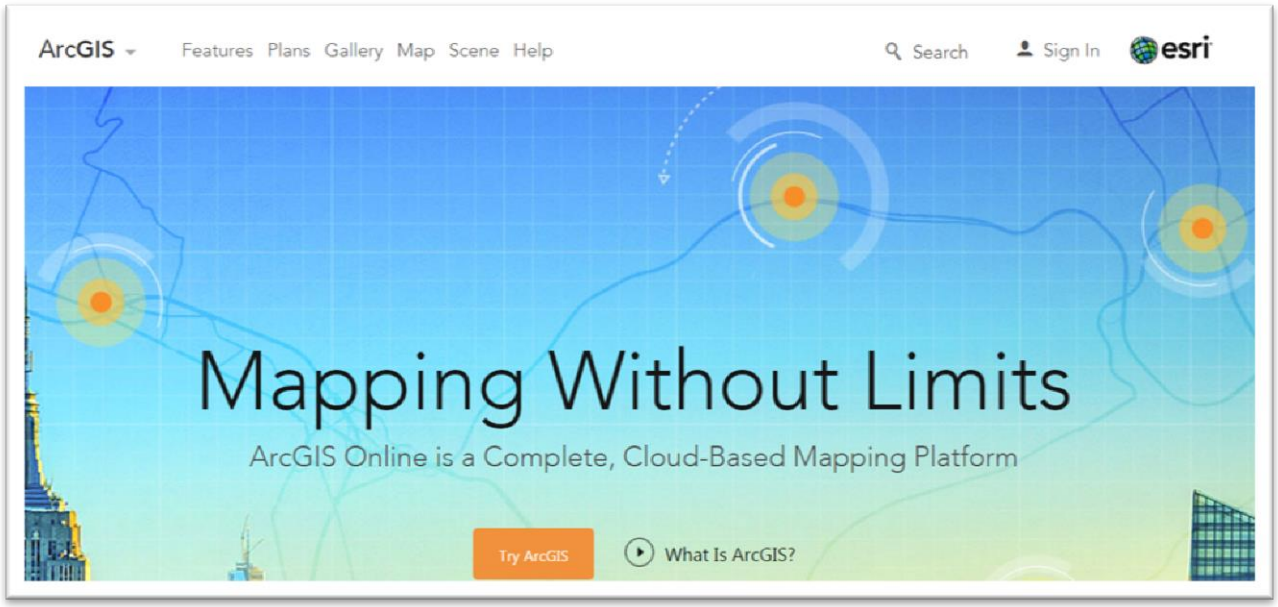
1. How to sign up.
2. Getting started with web maps.
3. Uploading files.
4. Symbolizing the files.
5. Sharing and embedding the files.

Task 1: How to sign up

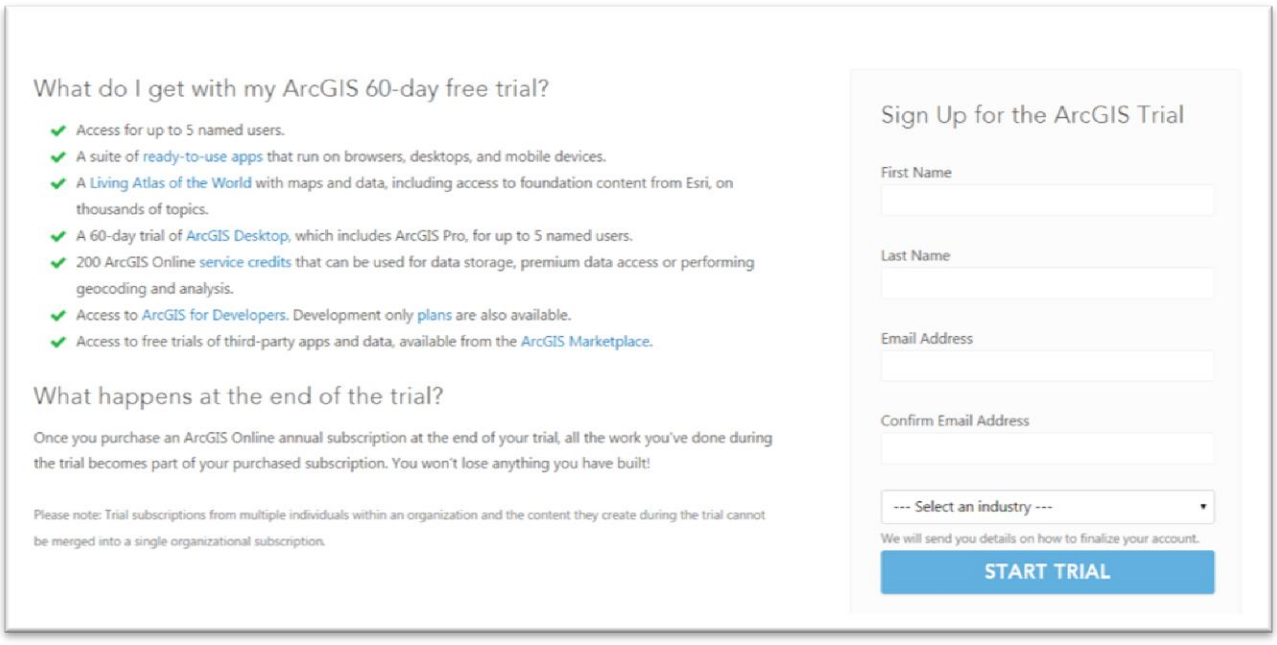
Use a compatible web browser. For the best performance, ArcGIS recommends that you use Mozilla Firefox 2, Google Chrome or Internet Explorer 8 or higher. Earlier

versions of Explorer are not supported. You can find more details and the ArcGIS Online Help Section.

If you don't have an account, you'll have to create one by going to the ArcGIS homepage and signing up.



Select Try ArcGIS, where you'll be taken to a "Sign Up" page.

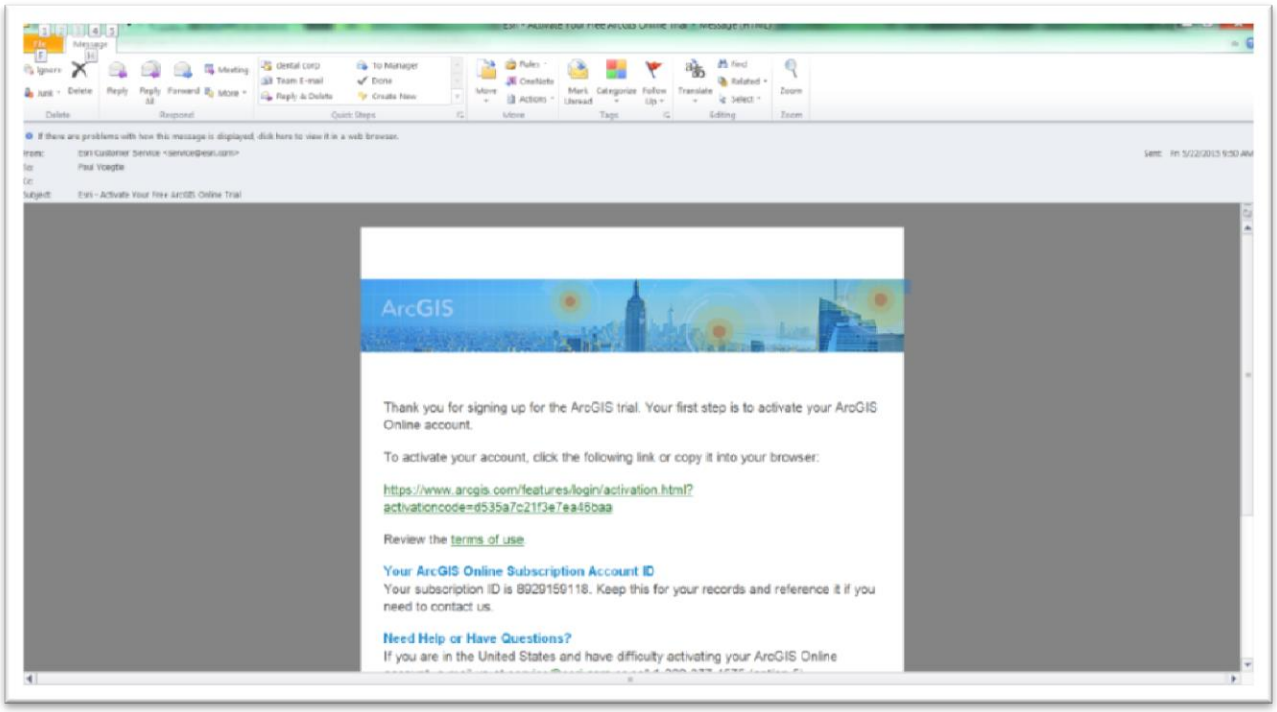


Enter your First Name.
Enter your Last Name.
Enter your email address, and re-enter your email address to confirm.

Select your industry from the drop-down menu.

Click on the START TRIAL button.

A confirmation page will appear and an activation email will be sent to the account that you provided.



Check for the activation email, and select the activation link to start creating your ArcGIS Online account.

Enter a username, between 6 and 128 characters in length and containing letters, numbers or a combination of both. You can also use the following special characters: .(dot), _(underscore) and @(at sign). Other special characters and spaces are forbidden. Your user name is also case-sensitive.

Signing up and creating passwords can be tricky and frustrating. So be ready to exercise a bit of patience.

Enter a password that is at least eight characters in length, containing at least one letter and one numbers. As is the case with your user name, special characters and spaces are not allowed. Your password is also case-sensitive. Re-enter your password to confirm.

If your email address is not populated in the "Email Address" field, be sure to enter it.

Plug in the name of your Organization, which can always be altered later.

Select a "Security Question" from the drop-down menu, and type an answer in the "Answer" field.

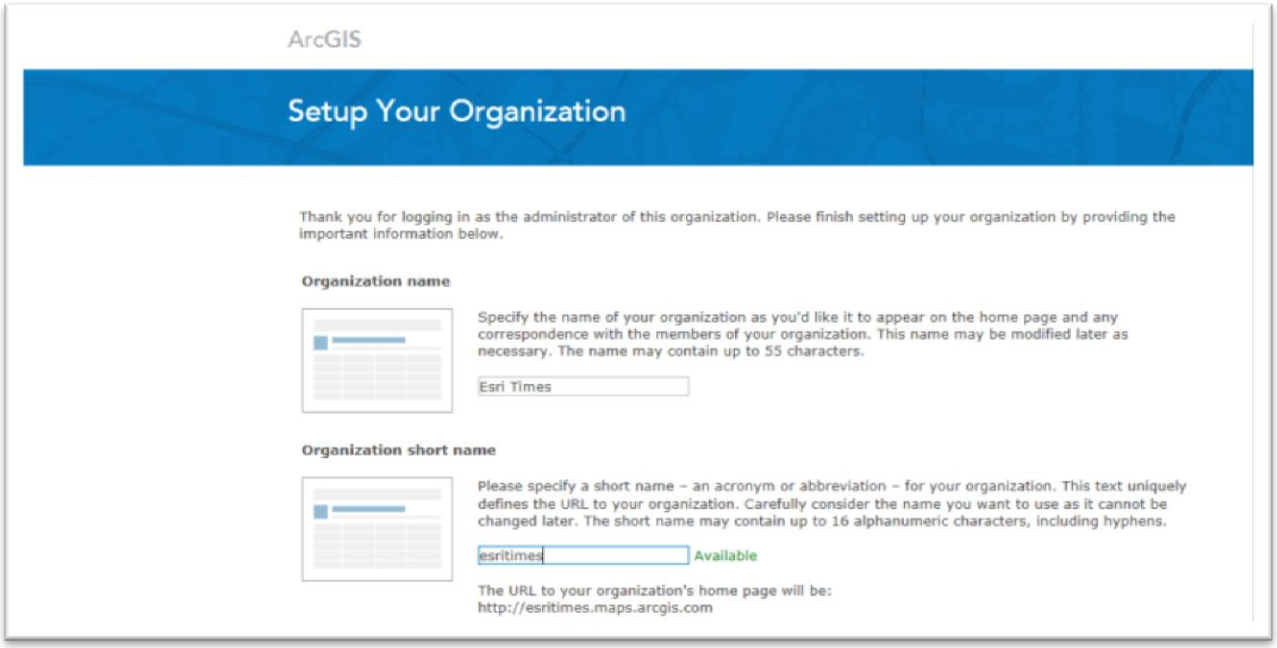
Read the "ArcGIS Online Terms of Use" and select the box to accept the terms and conditions

Click on the "Create My Account" button.

Now you must establish an organizational account to complete the setup process.

Organization Name will appear on the home page, which you can alter.

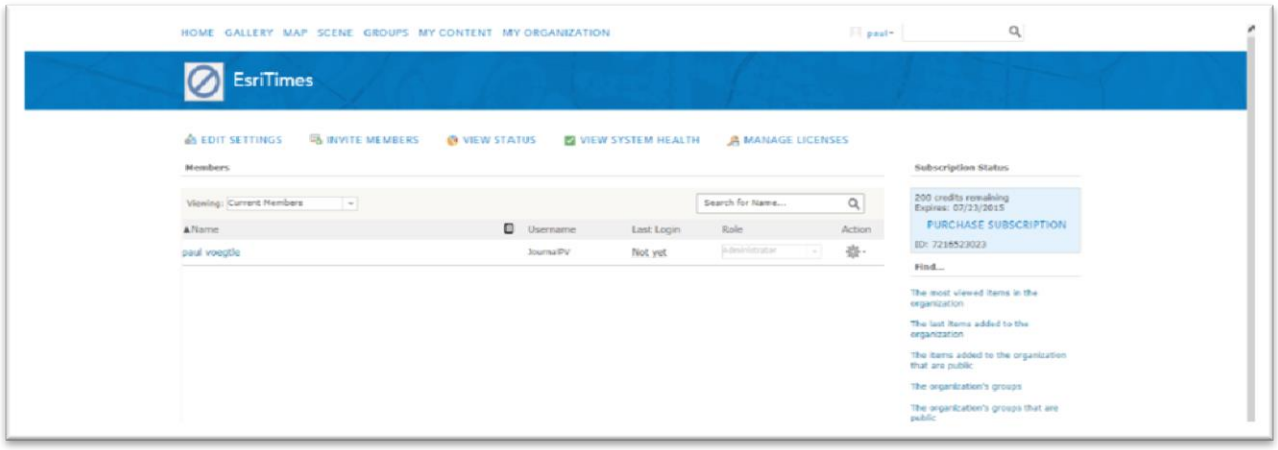
Organization Short Name – is an acronym or abbreviation (avoid special characters and spaces). This will become part of your organization's URL and cannot be altered later. The maximum number of characters for the short name is 16.



For **Language**, choose a default language of English or French. For **Region**, select a region to determine the default base _map gallery. Your choice of region also controls other feature such as the scale bar. For instance, selecting the United States produces units in miles and feet; Canada sets the unit in metres and kilometres.

For **Security**, uncheck the box to "Allow access to the organization through HTTPS only" and click OK to the warning. Leave **Link** as default.

Once you're done, you'll be guided to your organization's account. A welcome message will appear to show you how to access other ready-to-use apps. Click on the "Continue with ArcGIS Online" button.

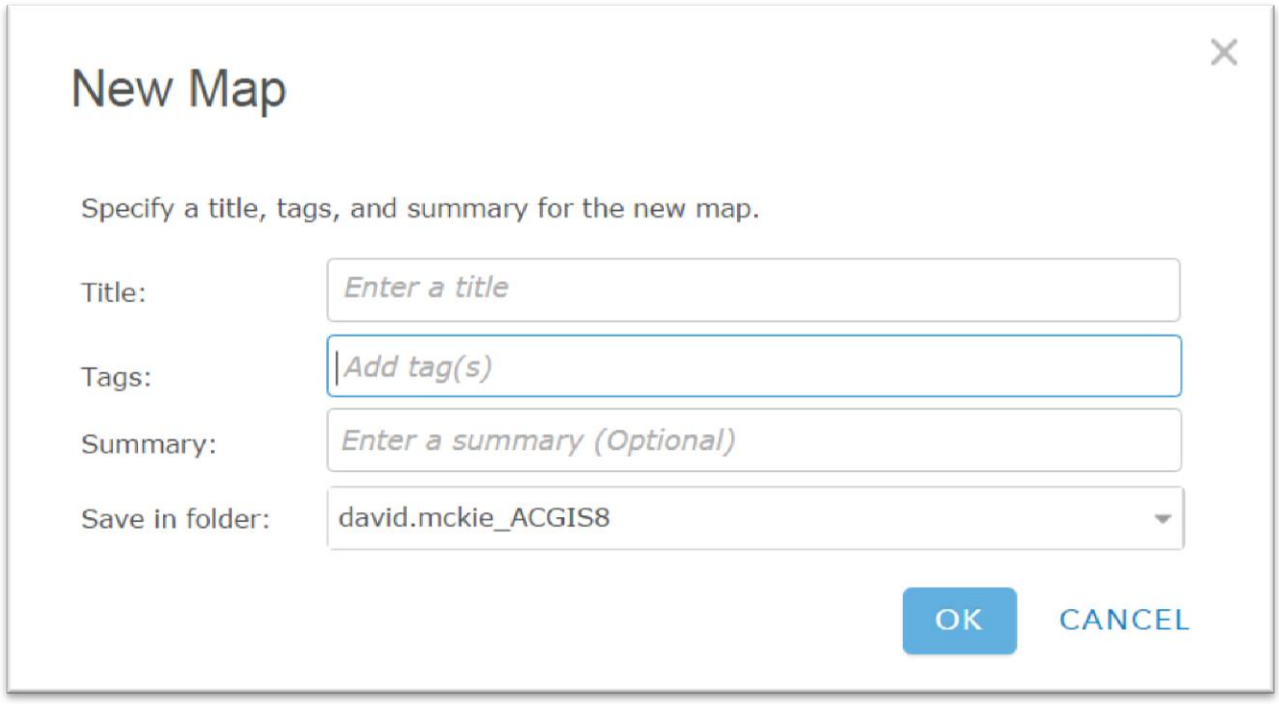


Task 2: Getting started with web maps.

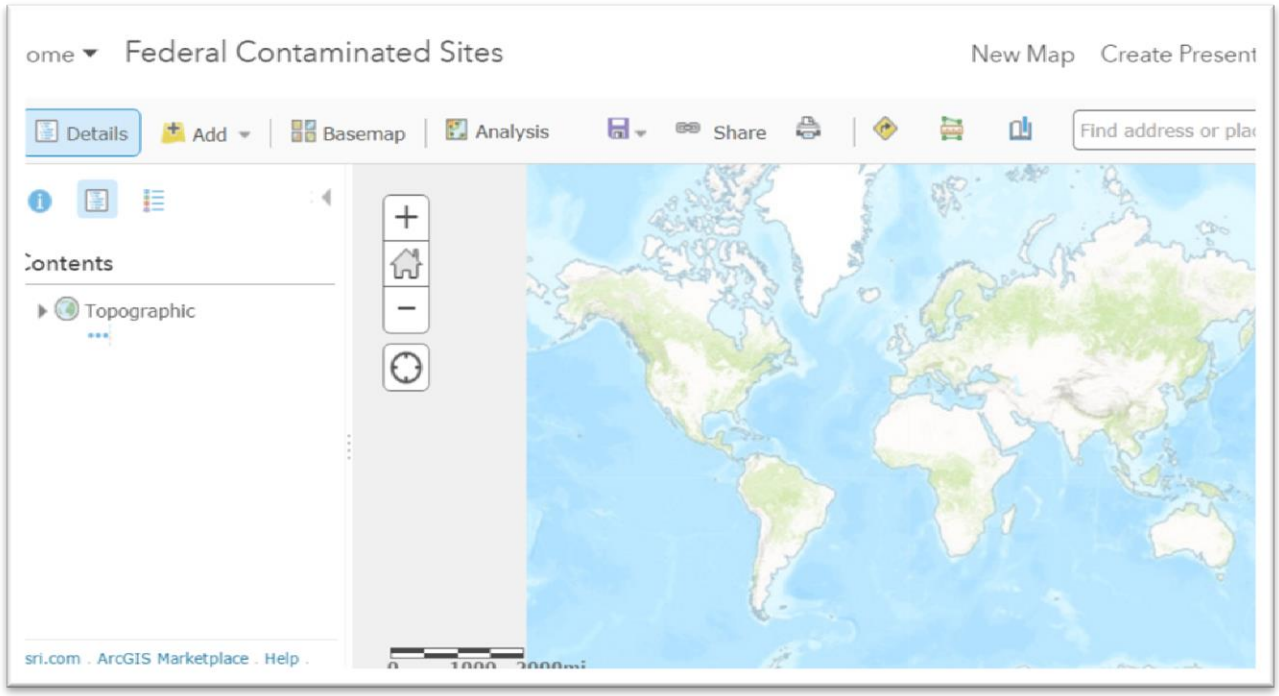
Once you've set up an account, you can sign into ArcGIS Online (www.arcgis.com) using your username and password.

You'll notice a menu across the top. To begin the process of uploading content, select "My Content."

Click the "Create" tab, and select "Map" option from the drop-down menu, which produces a dialogue box.

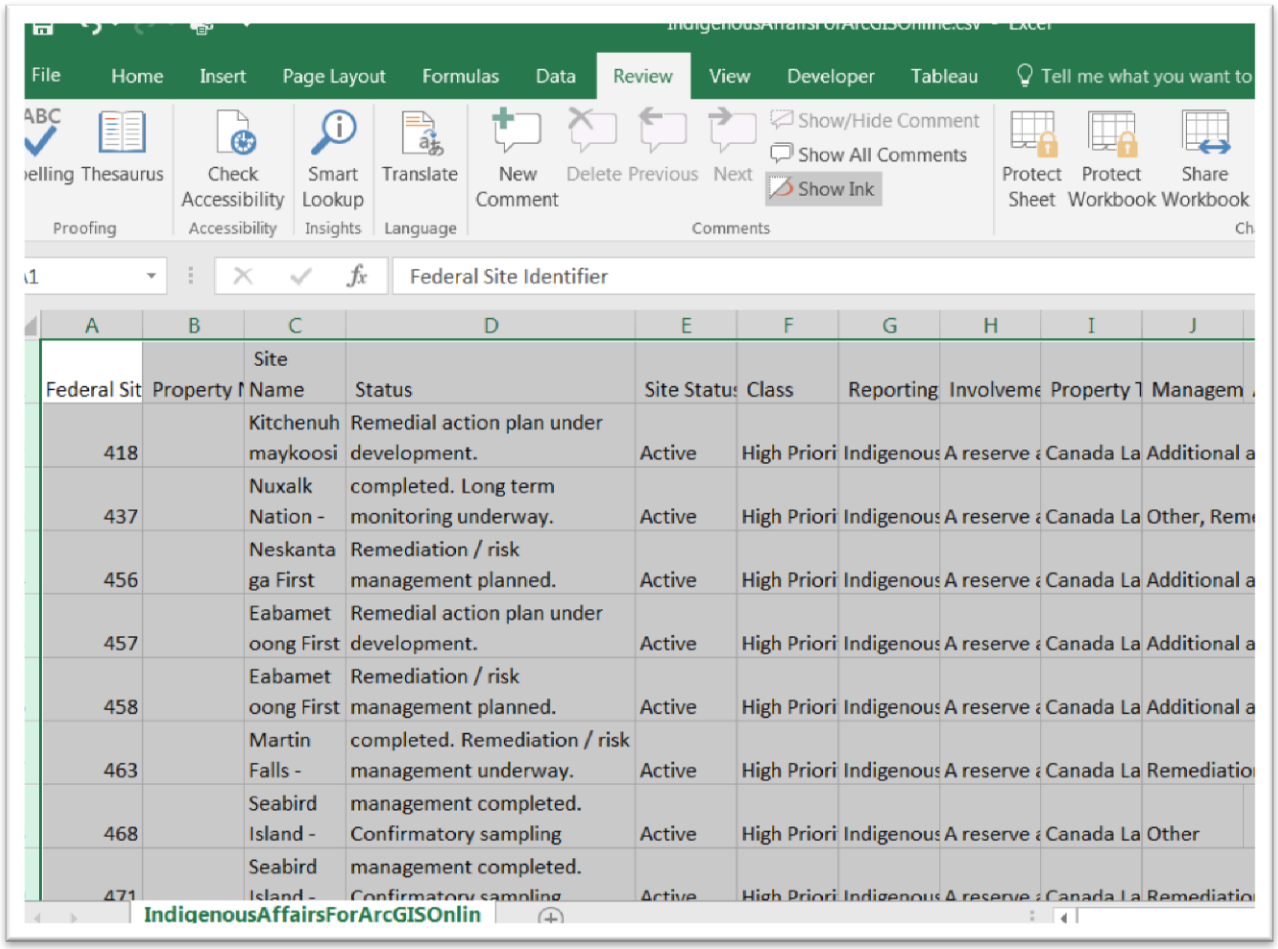


Enter a name in the "Title" box, and a few tags, (Summary is optional) and then click OK.



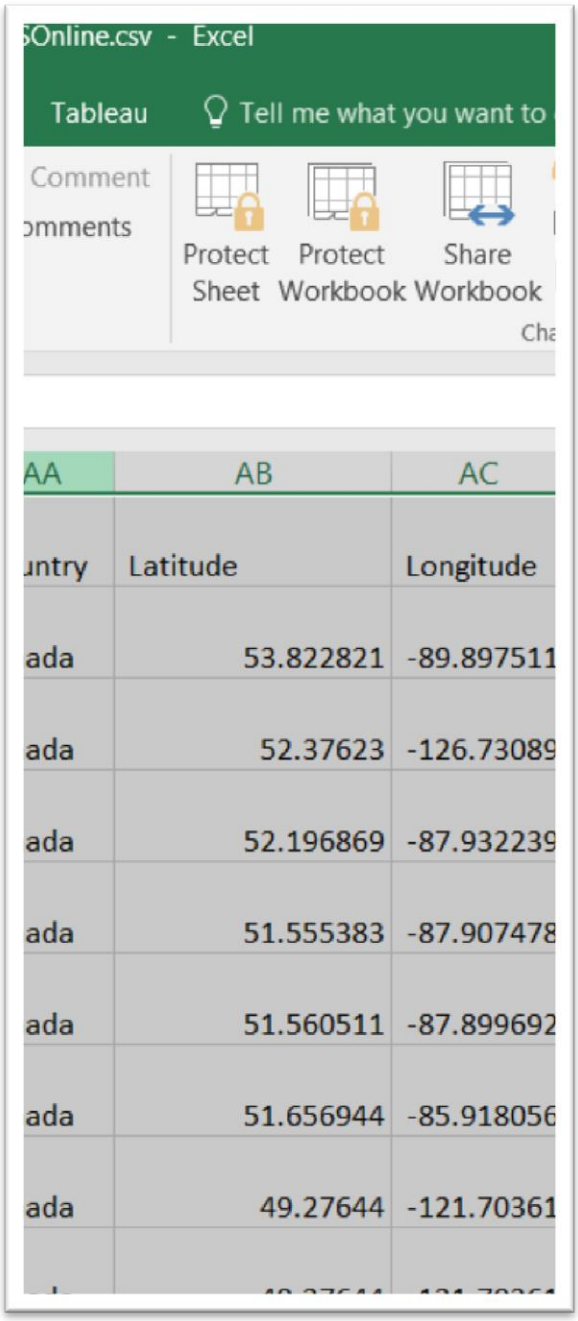
Task 3: Uploading files.

Click on the "Add" icon and select the "Add layer from file" option.
Now this is the base map that we will use to display the federal contaminated waste file that we used for Fusion Table tutorial.



Federal Sit	Property I	Site Name	Status	Site Status	Class	Reporting	Involveme	Property T	Managem
418		Kitchenuh maykoosi	Remedial action plan under development.	Active	High Priori	Indigenous	A reserve a	Canada La	Additional a
437		Nuxalk Nation -	completed. Long term monitoring underway.	Active	High Priori	Indigenous	A reserve a	Canada La	Other, Reme
456		Neskanta ga First	Remediation / risk management planned.	Active	High Priori	Indigenous	A reserve a	Canada La	Additional a
457		Eabamet oong First	Remedial action plan under development.	Active	High Priori	Indigenous	A reserve a	Canada La	Additional a
458		Eabamet oong First	Remediation / risk management planned.	Active	High Priori	Indigenous	A reserve a	Canada La	Additional a
463		Martin Falls -	completed. Remediation / risk management underway.	Active	High Priori	Indigenous	A reserve a	Canada La	Remediatio
468		Seabird Island -	management completed. Confirmatory sampling	Active	High Priori	Indigenous	A reserve a	Canada La	Other
471		Seabird Island -	management completed. Confirmatory sampling	Active	High Priori	Indigenous	A reserve a	Canada La	Remediatio

As was the case with Fusion Tables, you'll notice that there are many columns. Not to worry. Once we upload the file, we can de-select the columns that we don't want to show in the pop-up box. Scrolling to the right takes us to the geographic coordinates.



ArcGIS will the contaminated sites' latitude and longitude coordinates to place them on the map.

Close the CSV file.

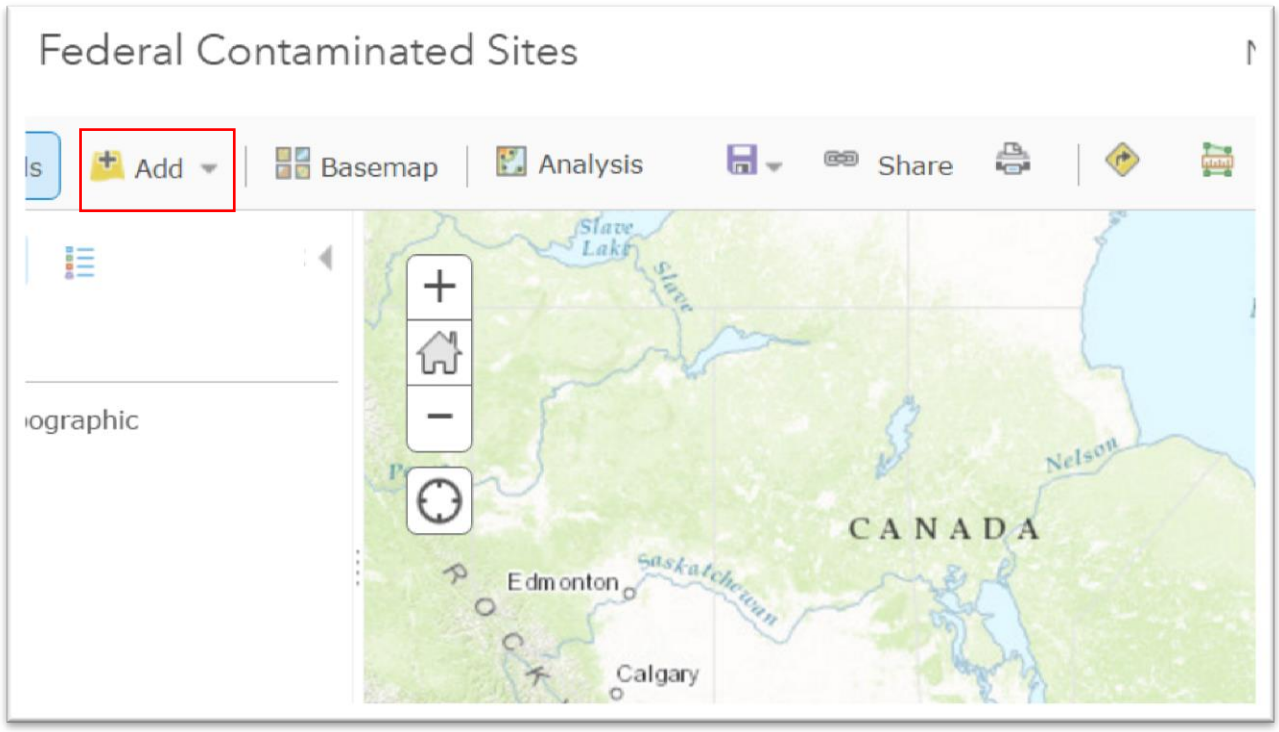
Go back to your empty map on ArcGIS Online.

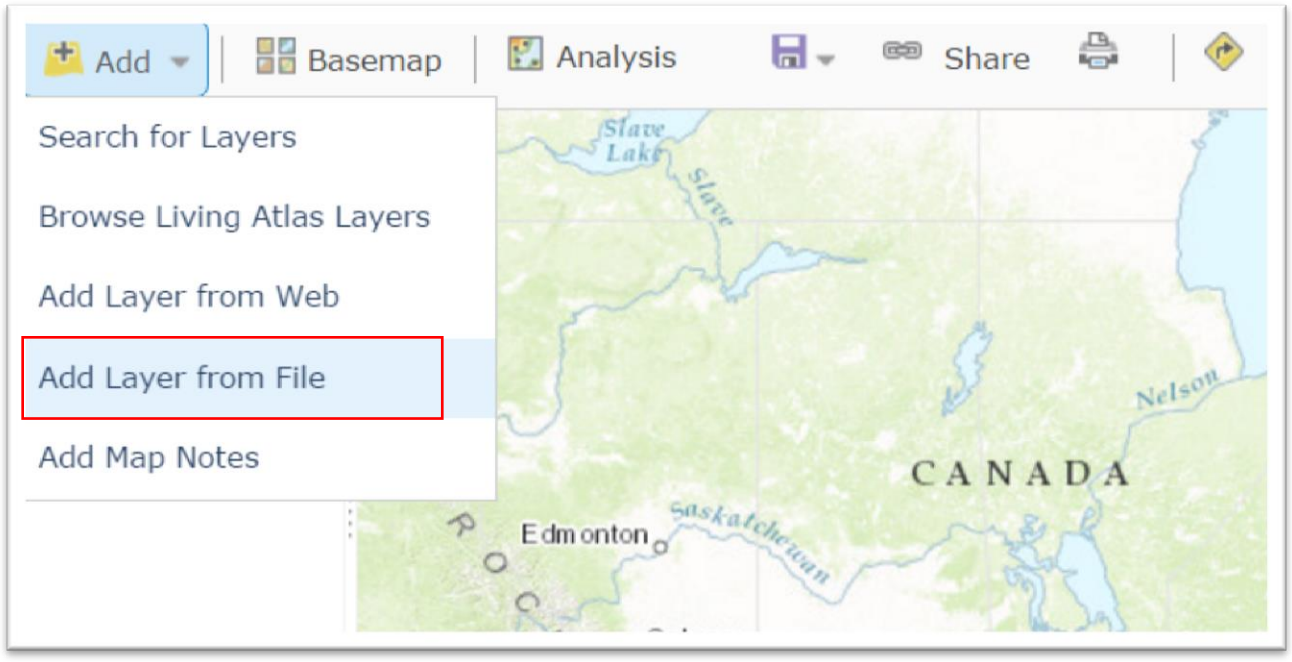
Zoom so that Canada is visible.

Pan to the map so that Canada is centred by clicking on the map and dragging it with your mouse.

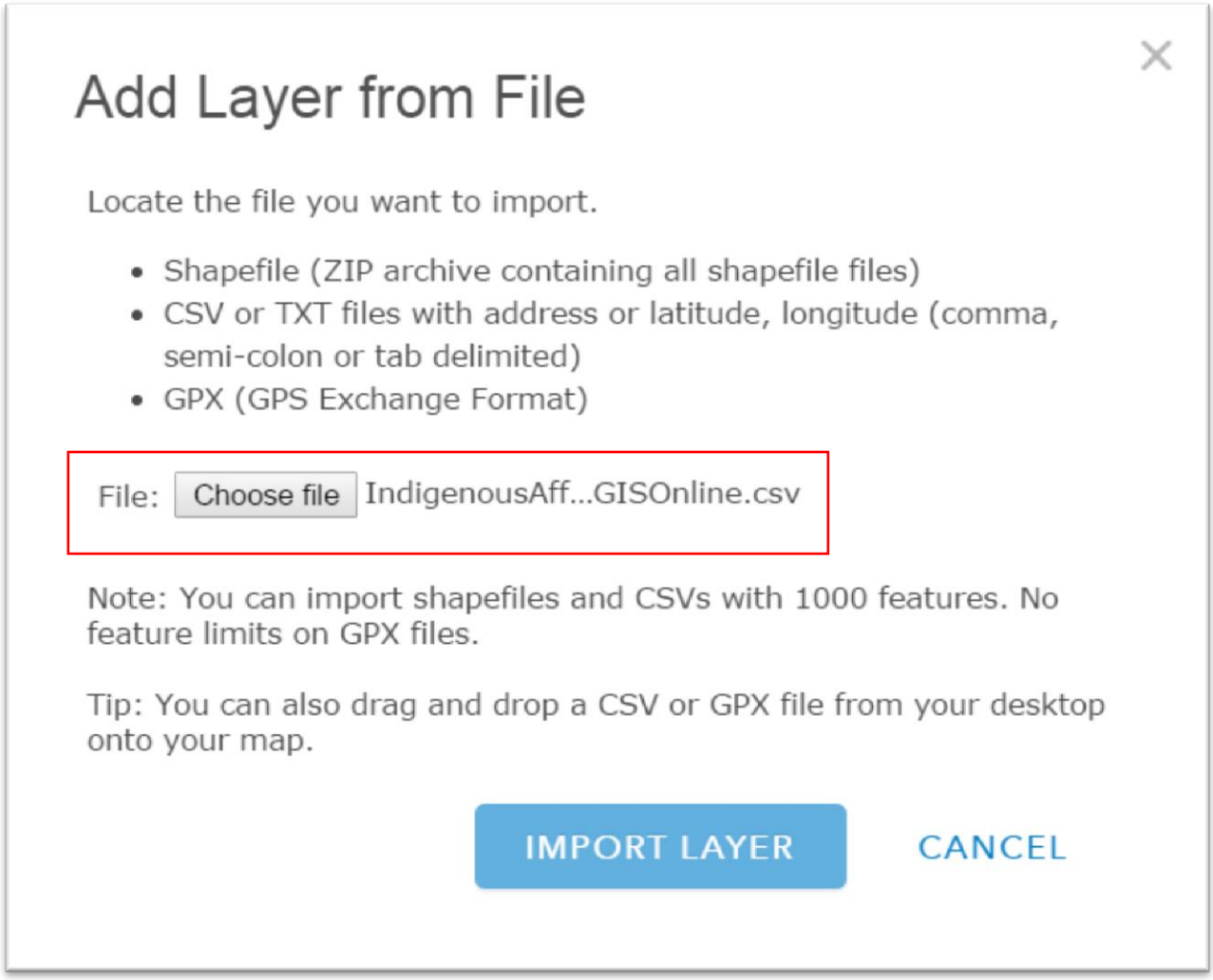
Now we're ready to add the contaminated sites locations.

Click the "Add" icon to the left of the map.





Select “Add Layer from File” and browse for the csv file.



Import the layer.

ArcGIS Online has automatically located the fields within your dataset related to location. That being said, ArcGIS Online can also handle many datasets with columns that might have other geographic information such as country, city, or a local address. So, you will need to specify which one you'd like to use. In the screen shot above, all the data has been added to the map with the default symbology, which we'll modify later in this tutorial.

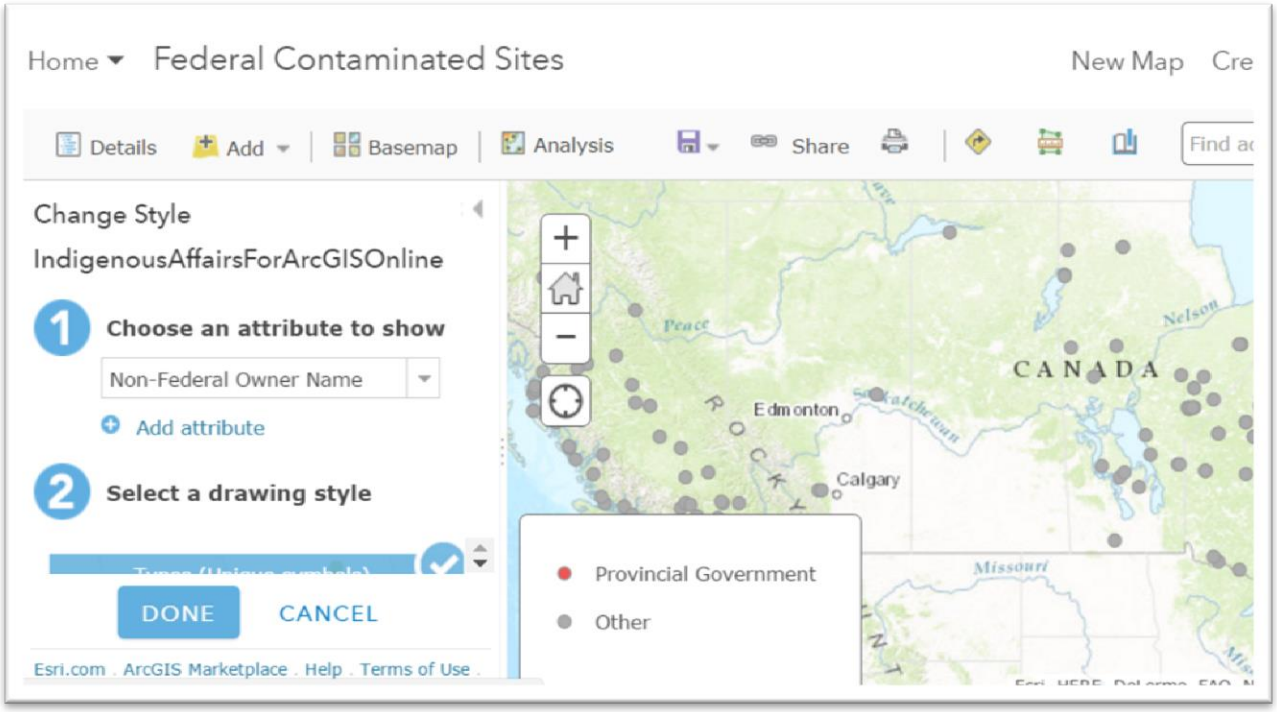
Before we continue, a word about symbology. To symbolize a feature, means "assigning colours, markers, sizes, widths, angles, patterns, transparency, and other properties that will make them recognizable on a map."

All features in layers added to ArcGIS Online possess the same symbology. In this case, the contaminated sites locations are displayed as small circles.

Now, back to the task at hand.

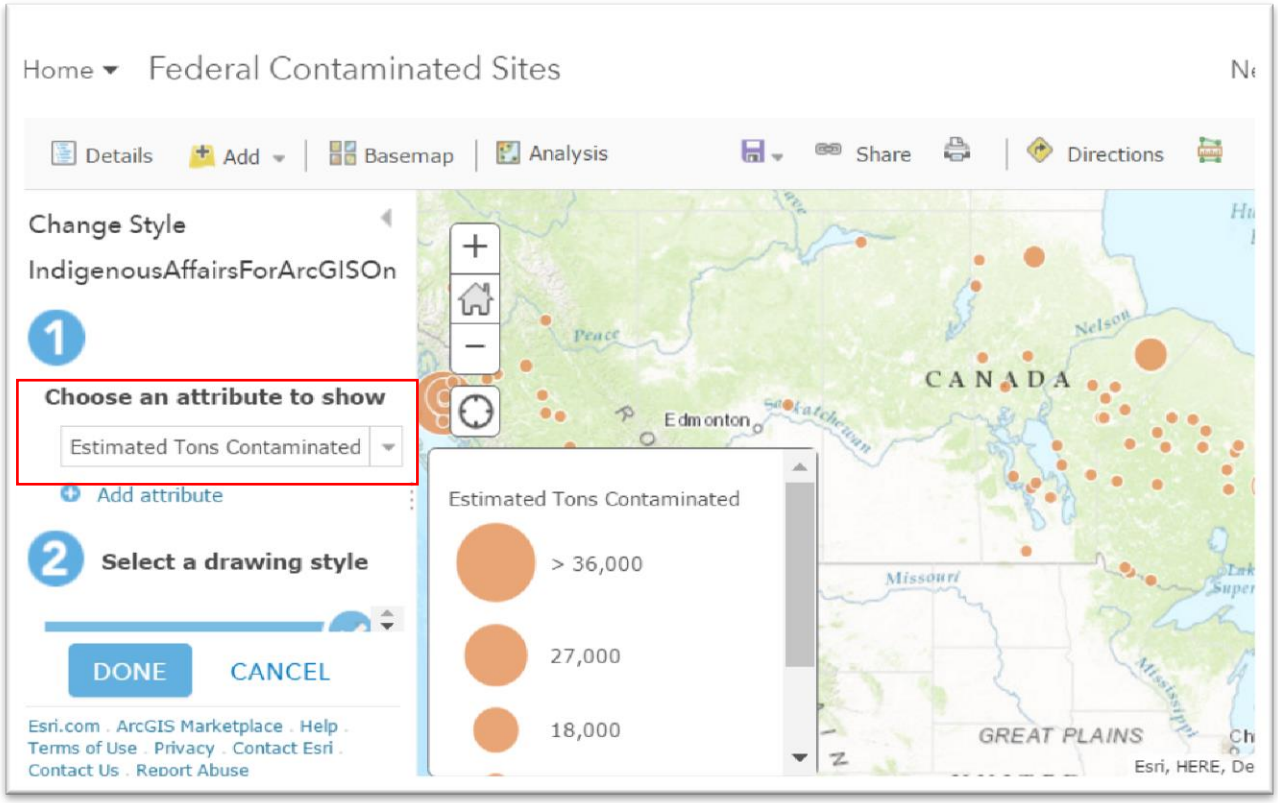
Task 4. Symbolizing the files.

Importing the contaminated sites layer also produces a "Change Style" menu to the left.



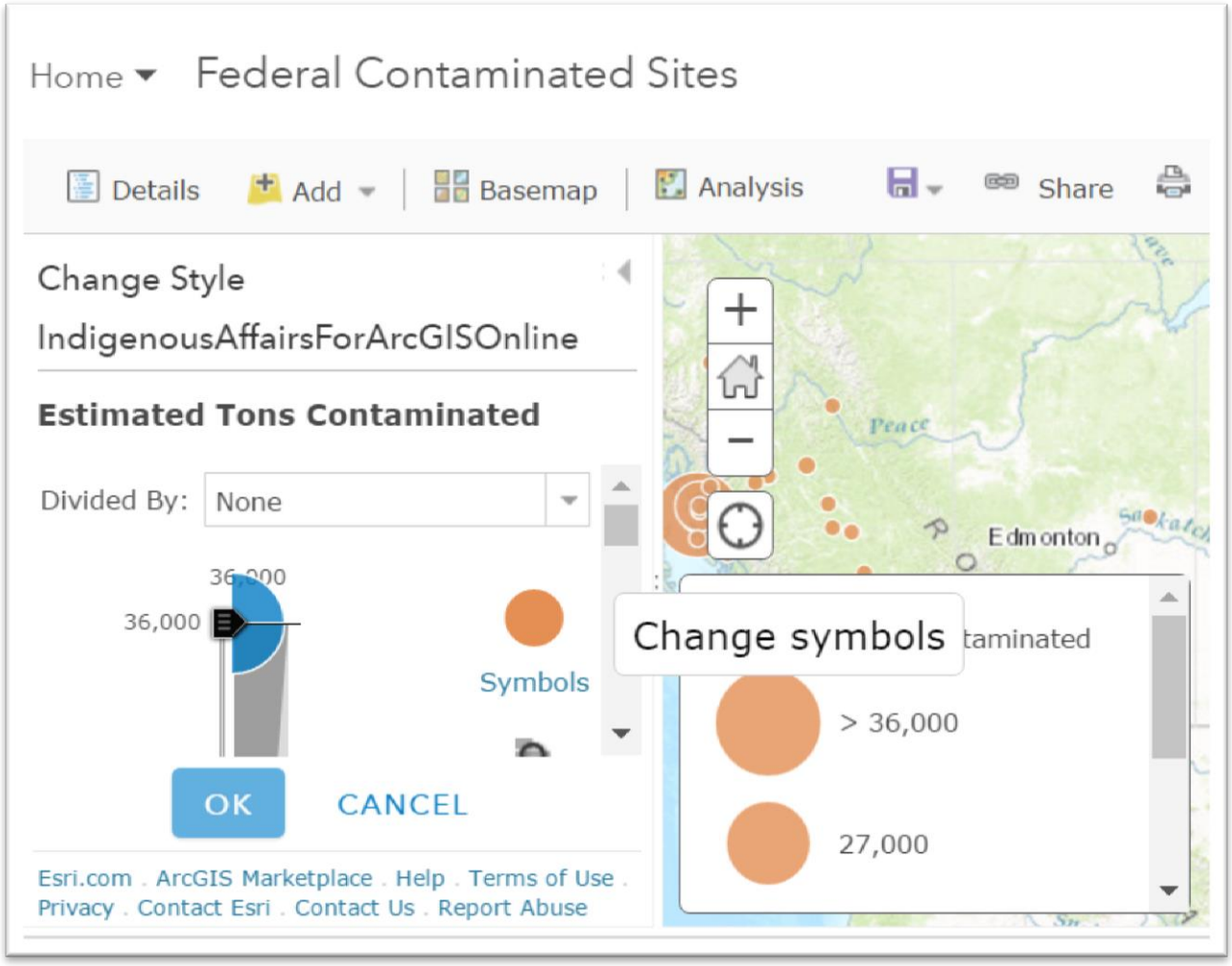
Step number 1 allows you to choose the "attribute" or column you want to show. Since ArcGIS Online has already used the longitude and latitudes to place the sites, you don't have to bother with this for now. However, if you wanted to display a value that denotes the level of contamination for each site, selecting that column would produce circles that would be sized proportionately to the contamination's surface area.

For instance, choosing the column "Estimated Tons Contaminated", produces a circles representing surface area the contamination covers.

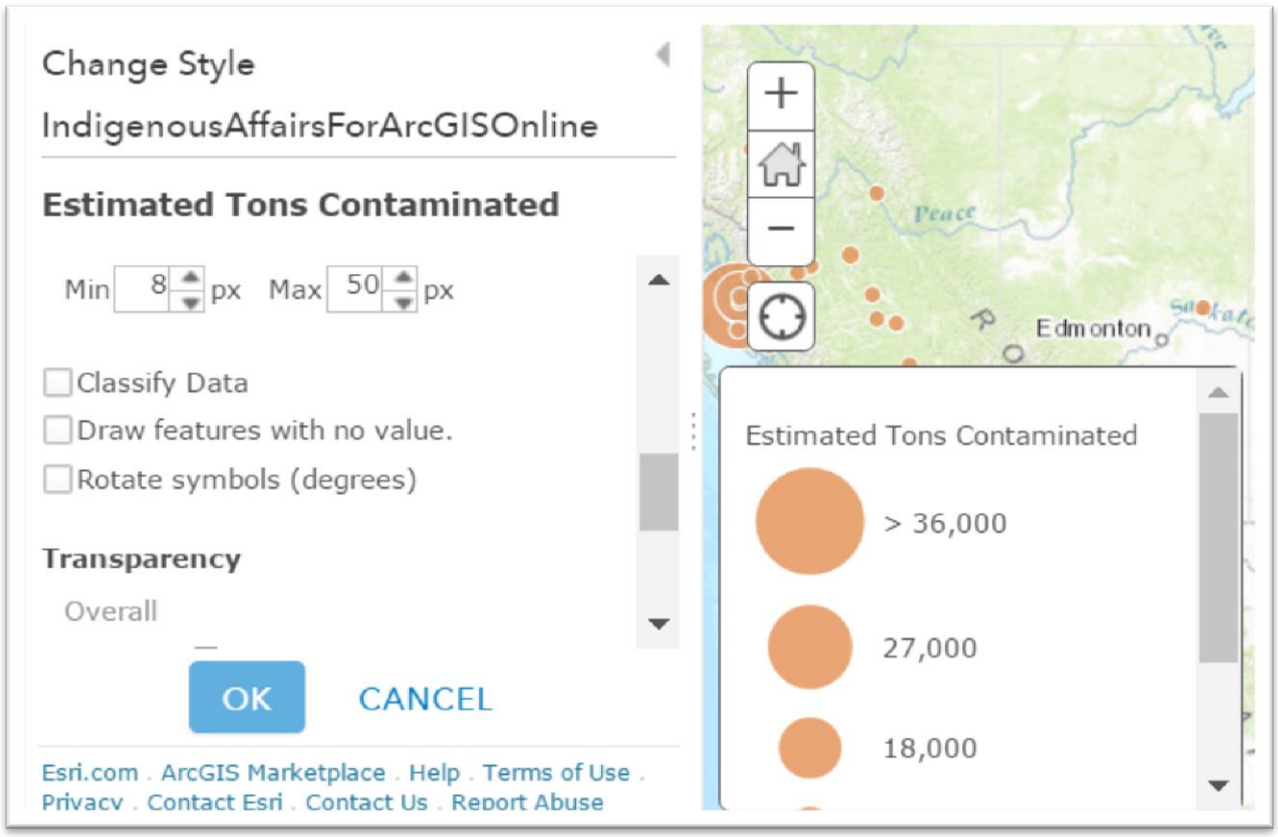


The pop-up box just below the map provides a legend.

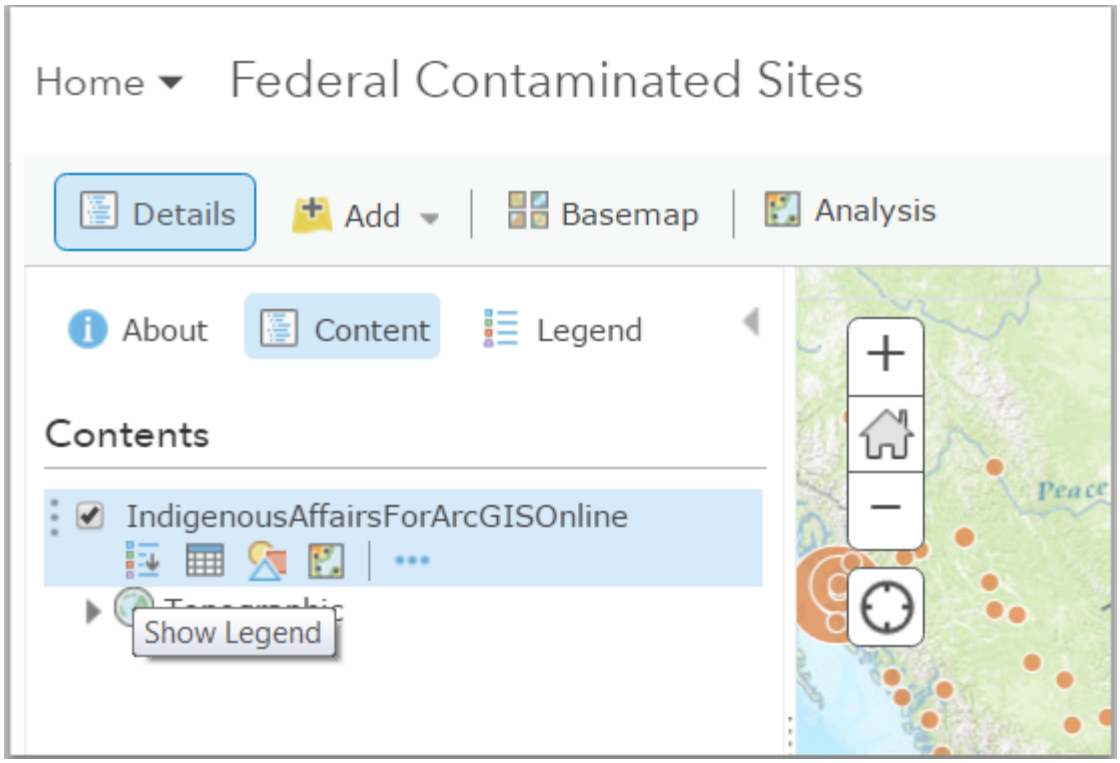
Clicking on step 2 produces more options for changing the symbology.



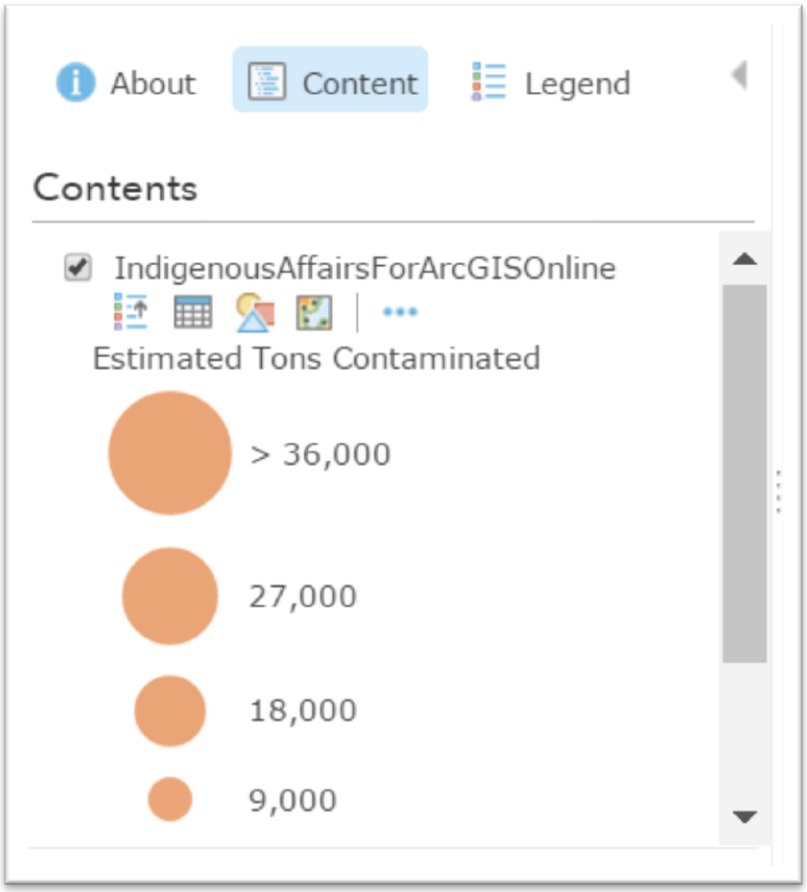
For instance, you can change the actual symbol by hovering your mouse above the "Symbols" icon. By adjusting the slider to the left of the "Symbols" icon, you can alter the range of values, perhaps eliminating the ones that you don't want displayed on the map. And by using the vertical scroll bar to the right, you'll locate other options lower down on the menu.

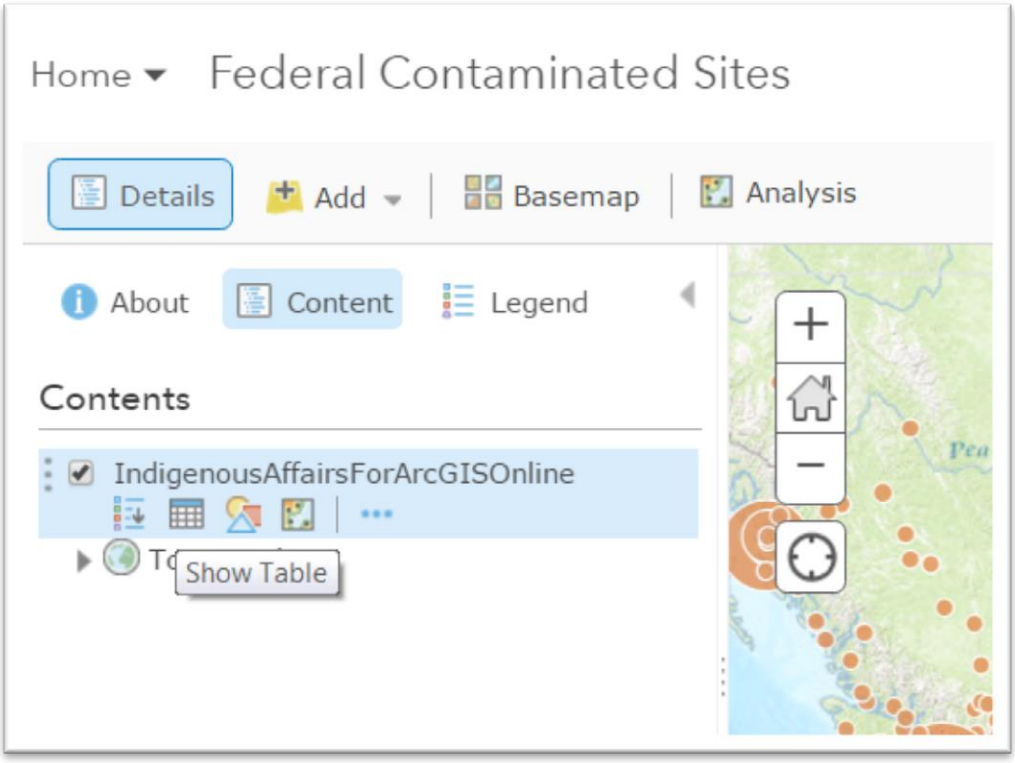


Because we can also change the symbology even after the layer has been added, select the "OK" and then the "DONE" tabs. Hovering your mouse over the new csv layer produces a menu of icons immediately below.

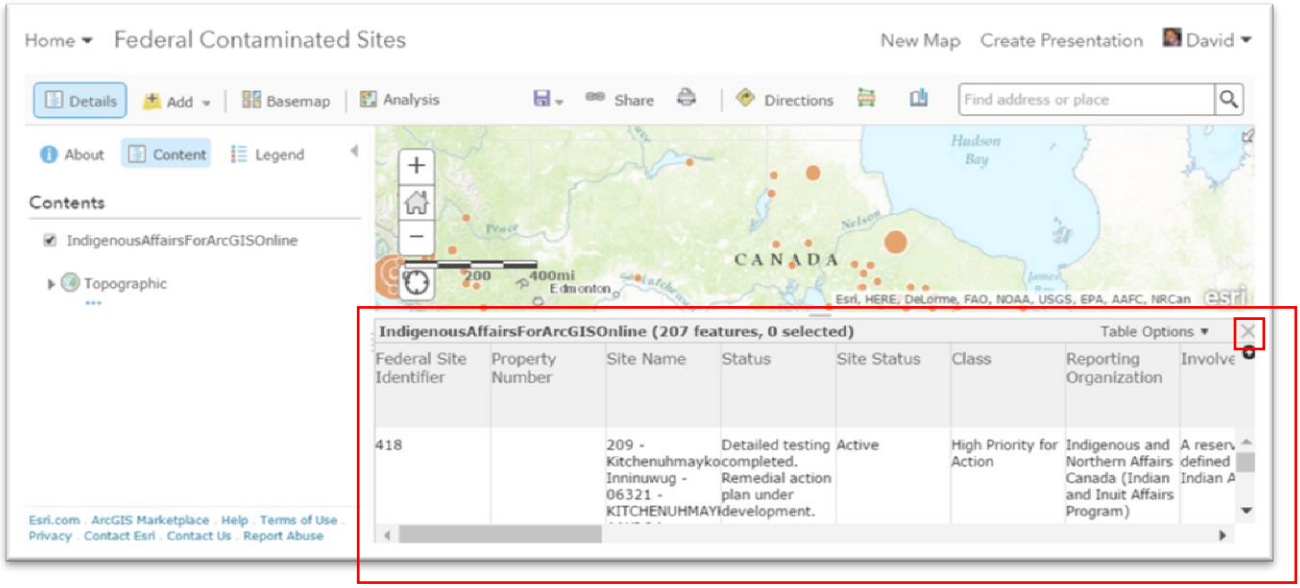


"Show Legend" produces the values that you've chosen to display when importing the dataset, in this case, "Estimated Tons Contaminated".

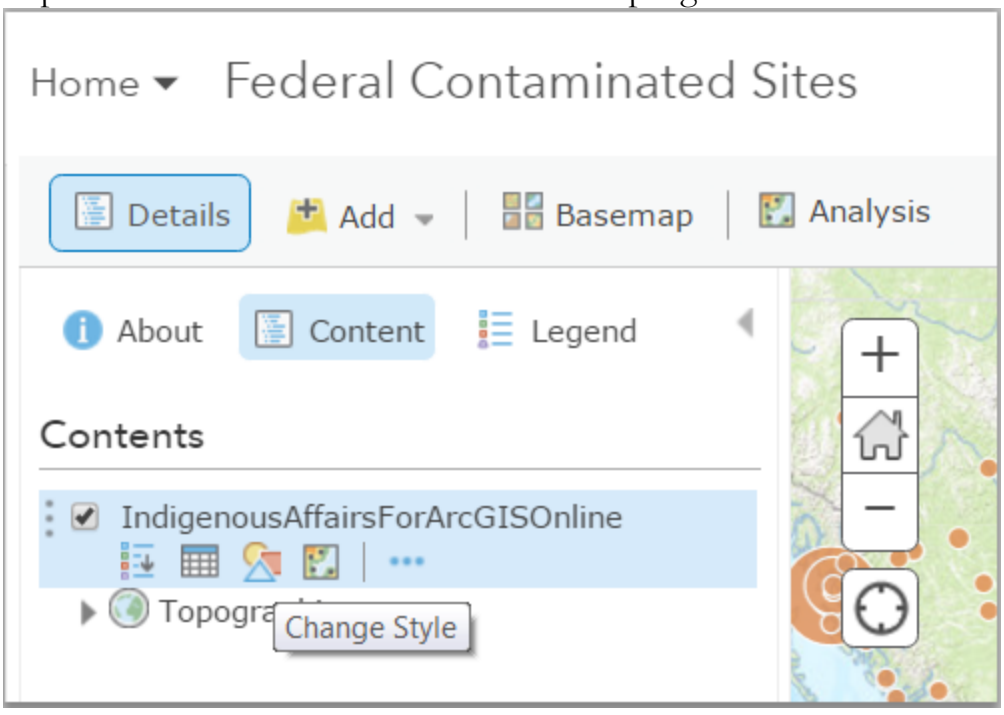

About
Content
Legend
Contents
IndigenousAffairsForArcGISOnline
Estimated Tons Contaminated
> 36,000
27,000
18,000
9,000


Home
Federal Contaminated Sites
Details
Add
Basemap
Analysis
About
Content
Legend
Contents
IndigenousAffairsForArcGISOnline
Show Table

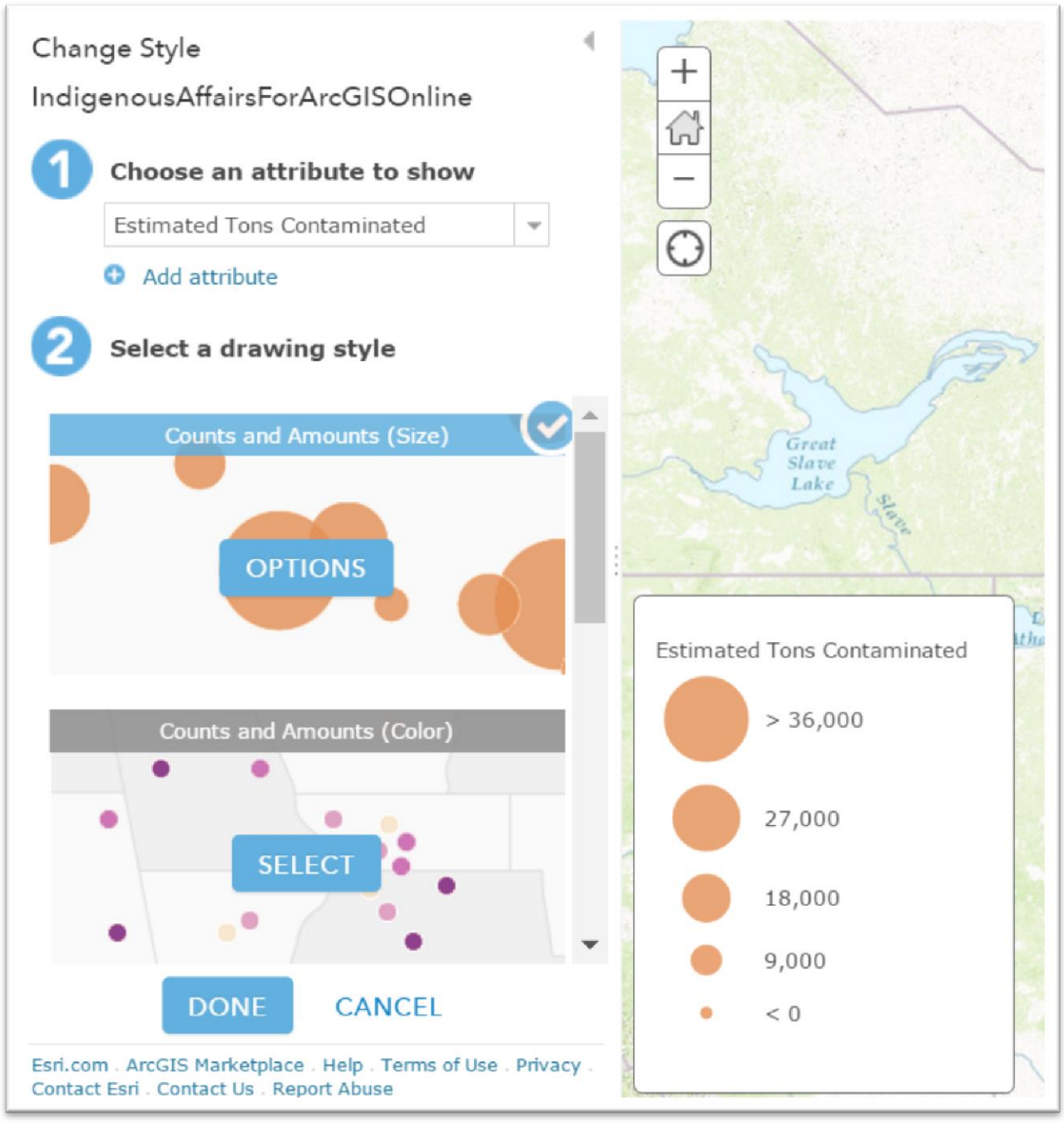
Selecting the "Show Table" icon produces a view of the table right below the map.



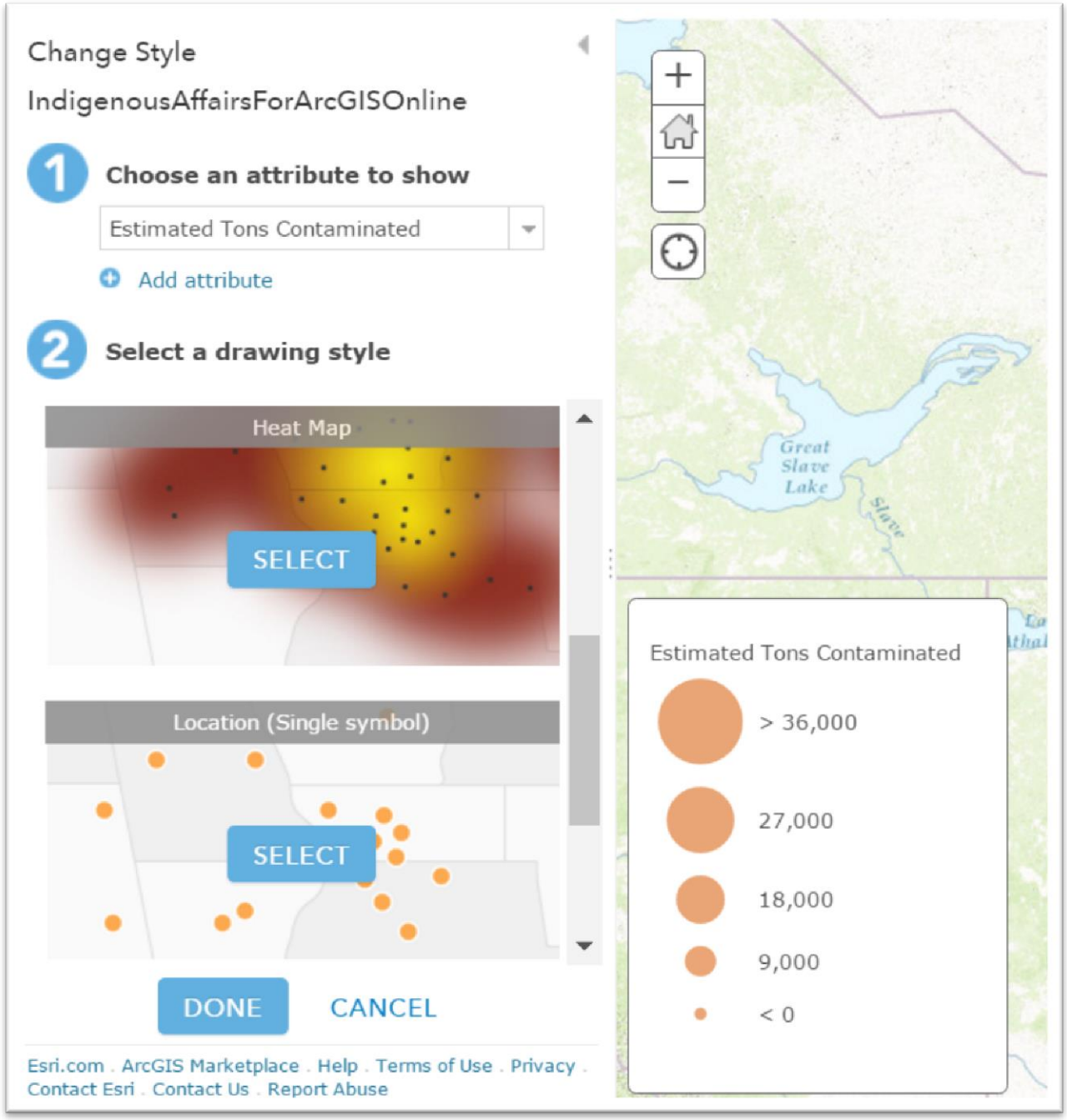
Hovering your mouse over the titles allows for sorting the column's values in ascending or descending order, a step handy for checking that everything has been imported. Click on the "X" at the table's top-right corner to hide it.

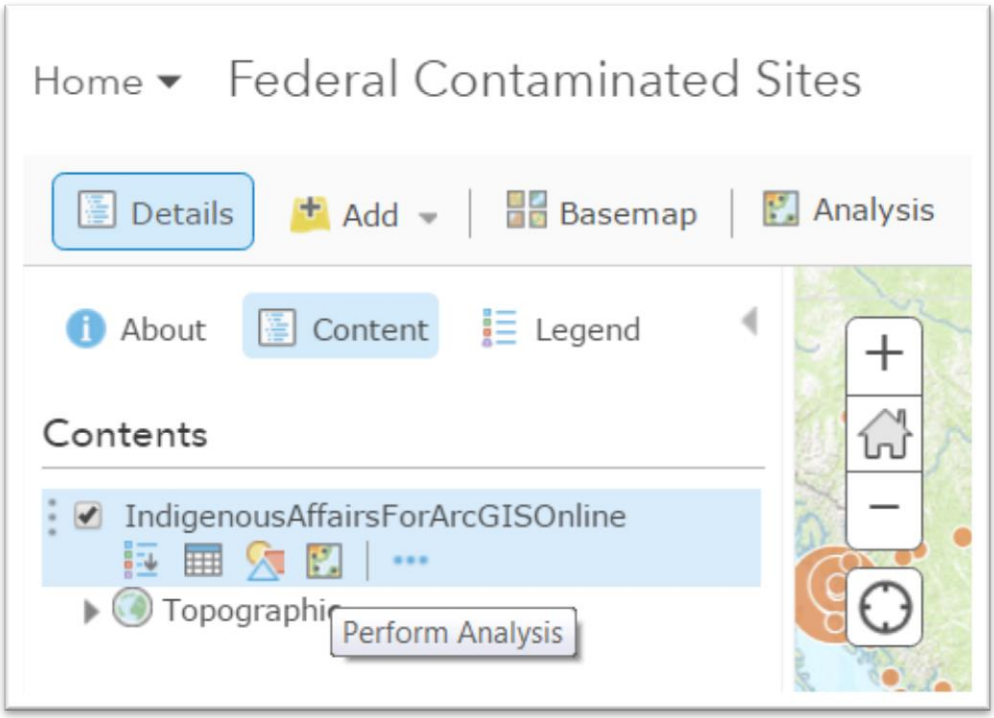


The "Change Style" option allows for the same kinds of changes to the symbology that we described earlier.

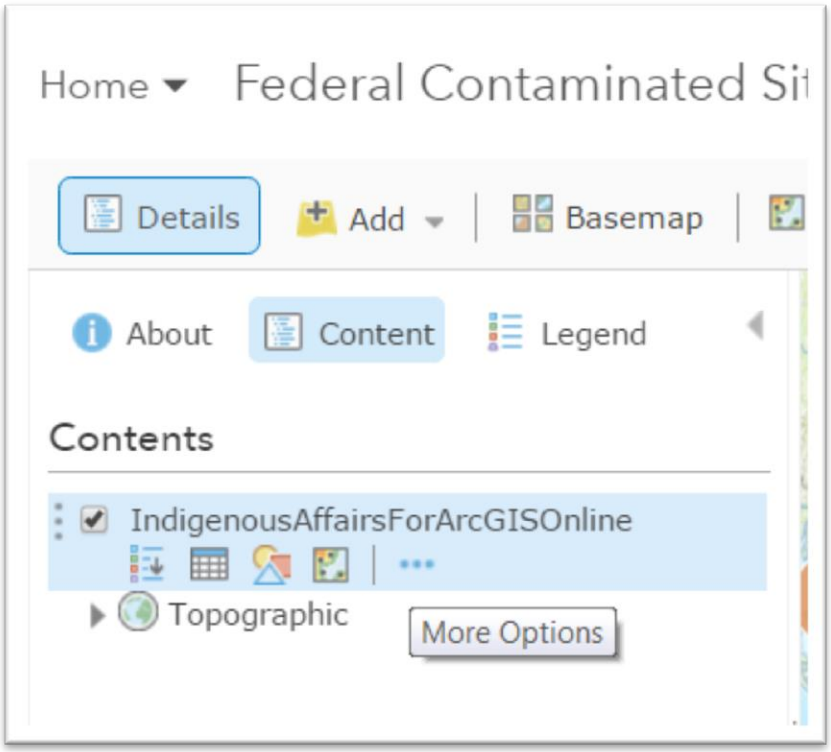


Use the vertical scroll bar to the right to see more options such as the ability to make a heat map, which is described in Chapter 6 on pages 127 and 128.

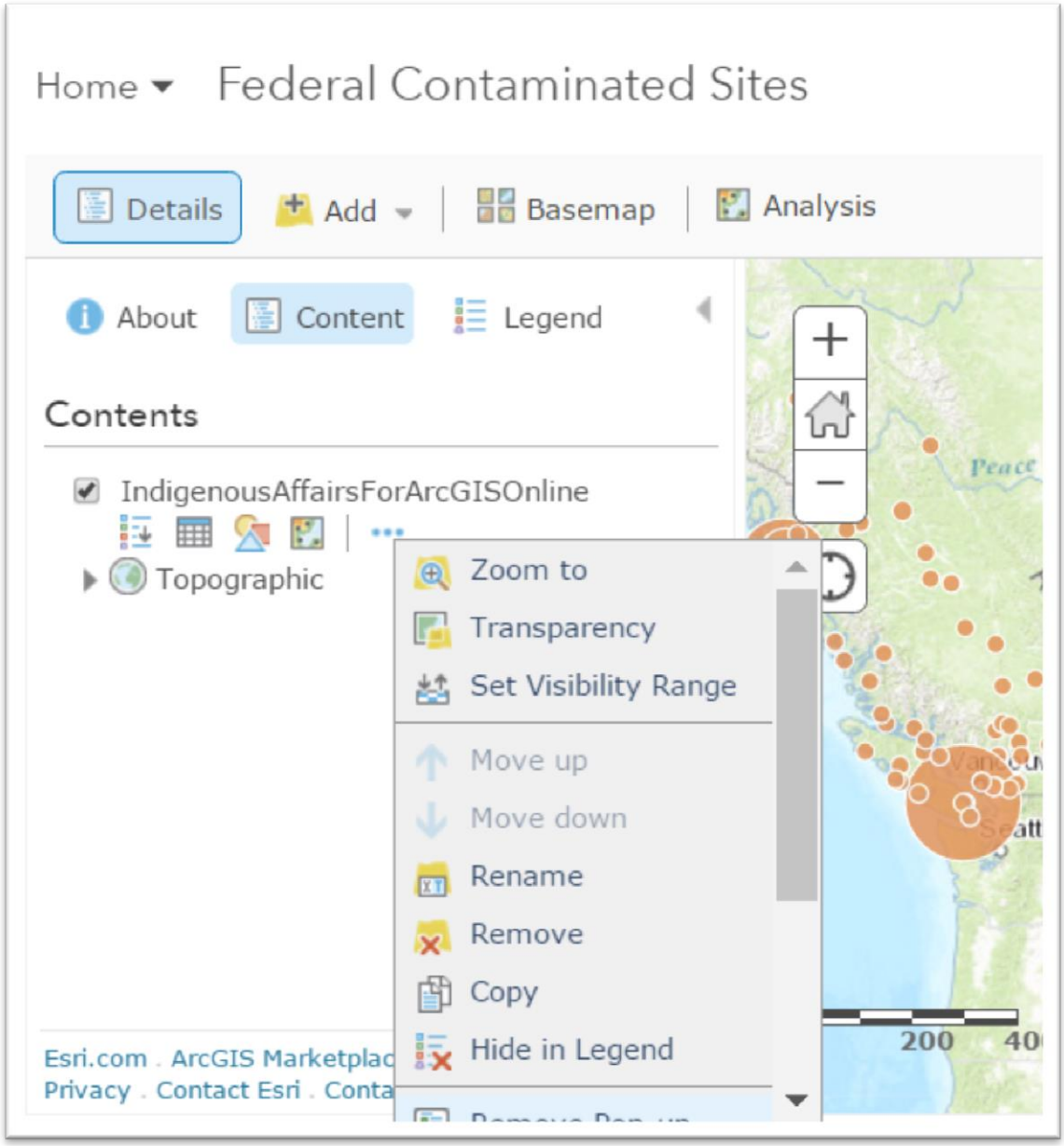




If you don't have an account, your interface will not contain the icon that allows you to conduct analysis such as spatial joins.

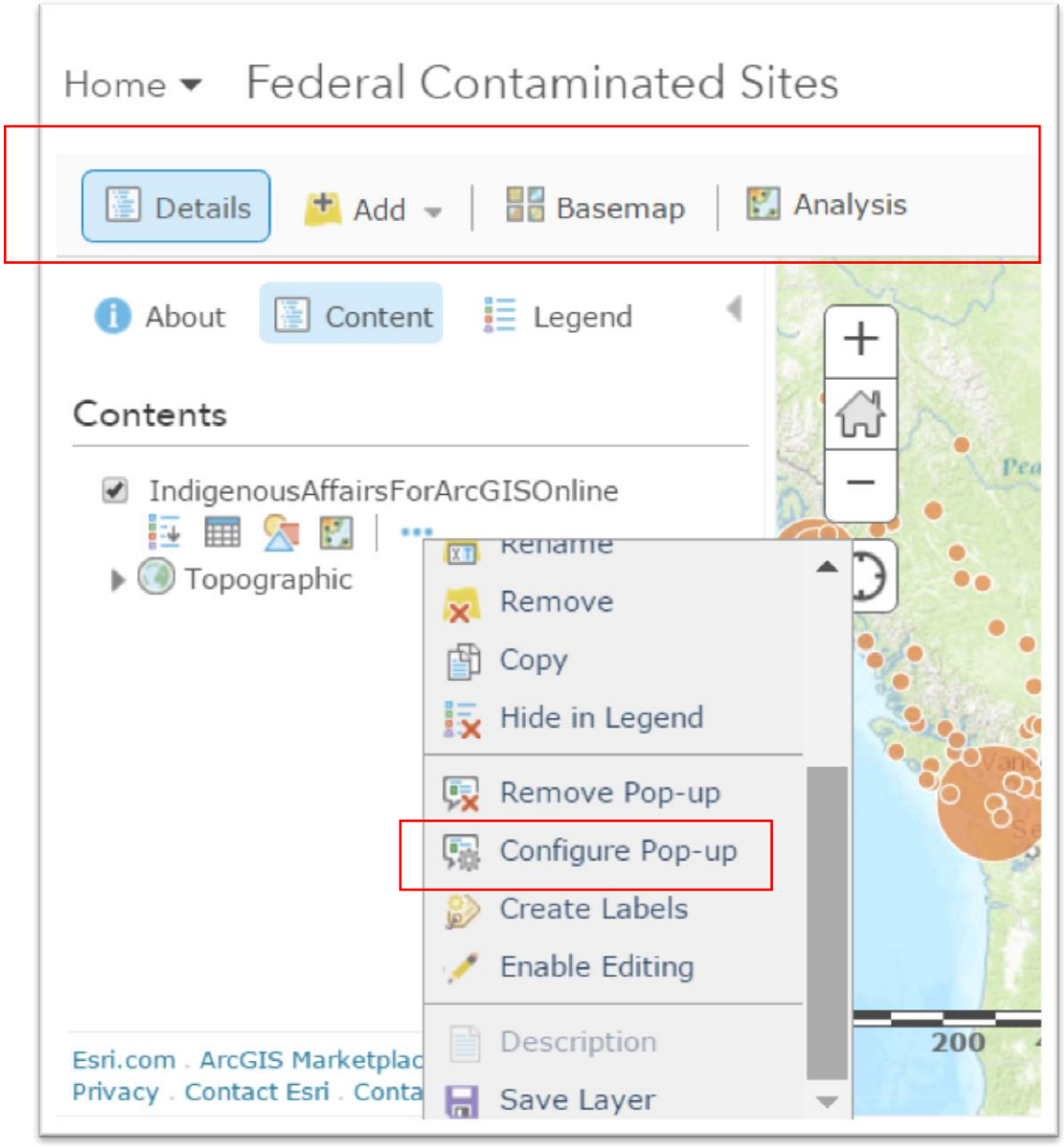


"More Options" produces a drop-down menu.



The menu allows you to perform tasks such as reconfiguring the pop-up up menus, which you can see by using the vertical scroll bar to navigate towards the bottom of

the menu. .

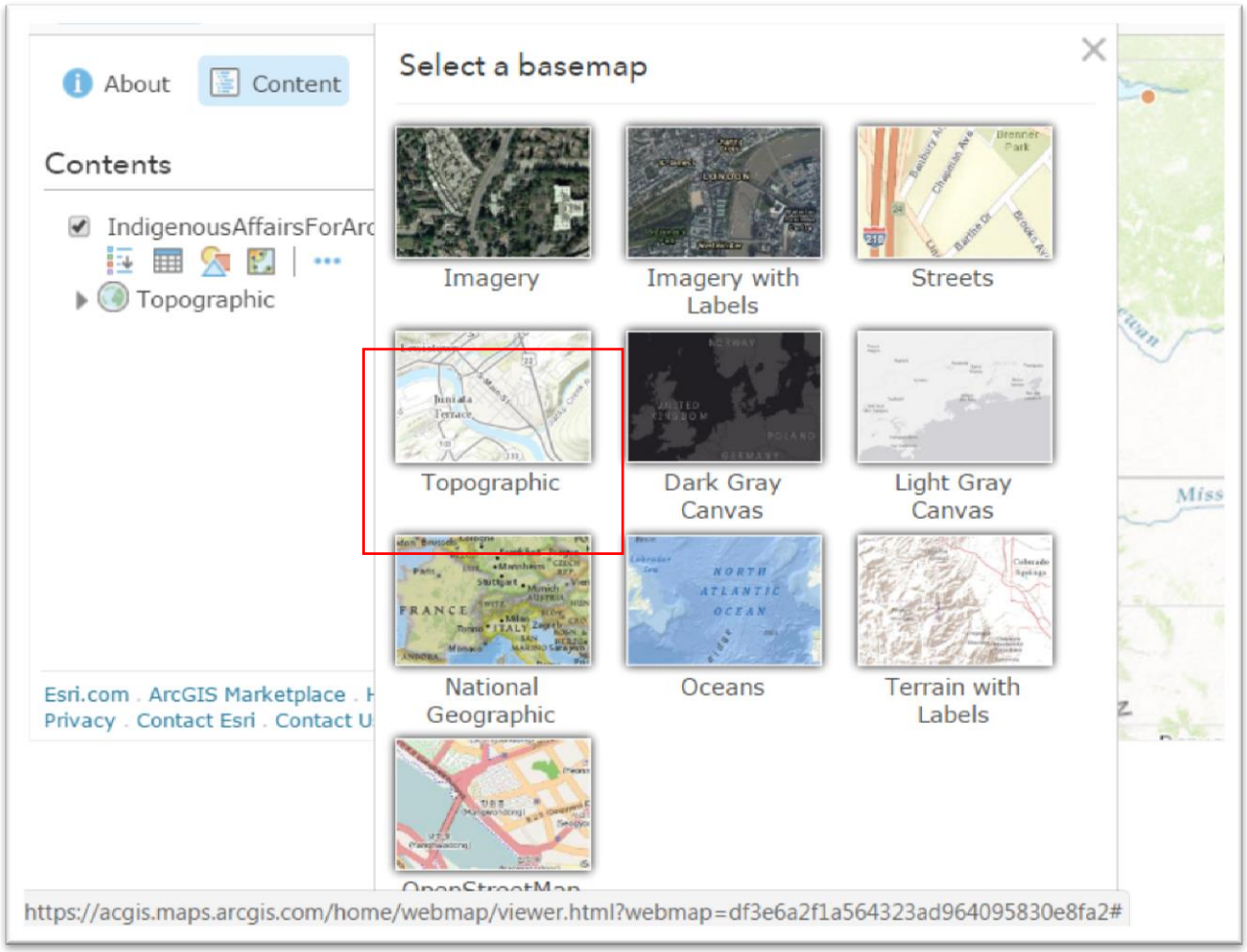


By now you've probably also noticed the icons above the Contents menu.

Clicking on "Details" makes the menu to the left appear and disppear.

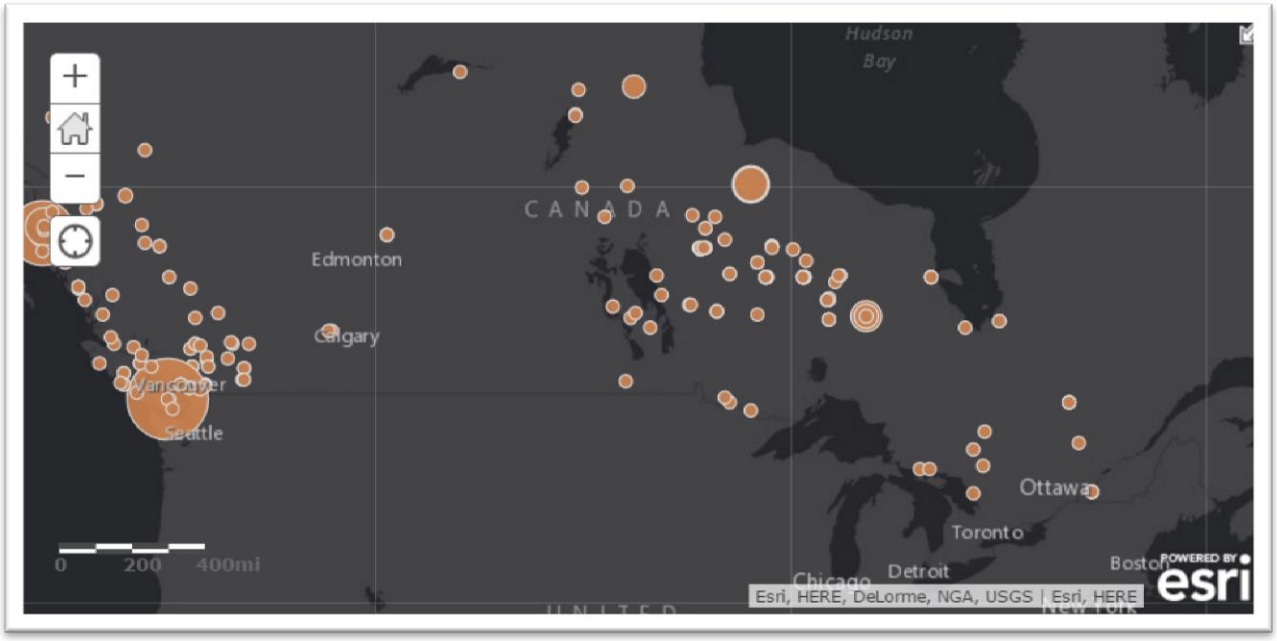
As we've seen "Add" permits us to add layers, either from our hard drive, the web, or the ArgGIS Online archive.

"Basemap" produces a gallery of maps.



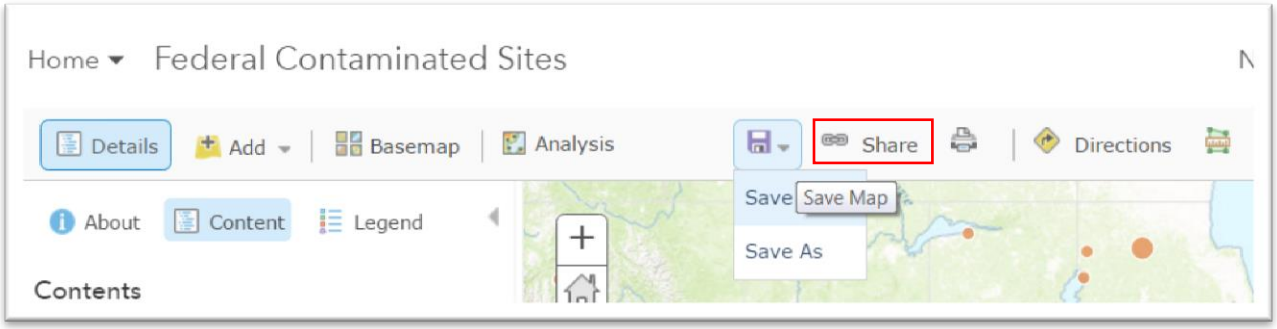
The "Topographic" map is the one we're using.

For instance, selecting the "Dark Gray Canvas" produces a starker result.



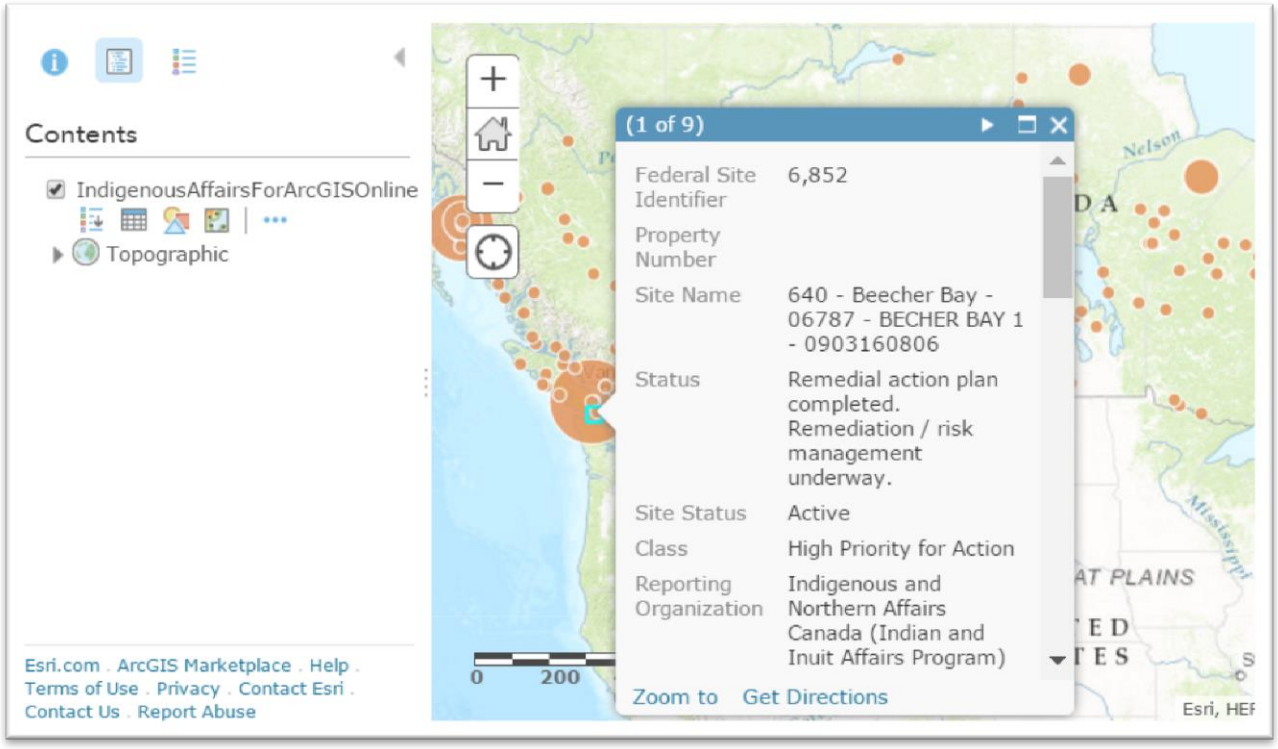
To return to our original map, return to your basemap section and select the topographical map.

As previously mentioned, only paid accounts provide opportunities for analysis.

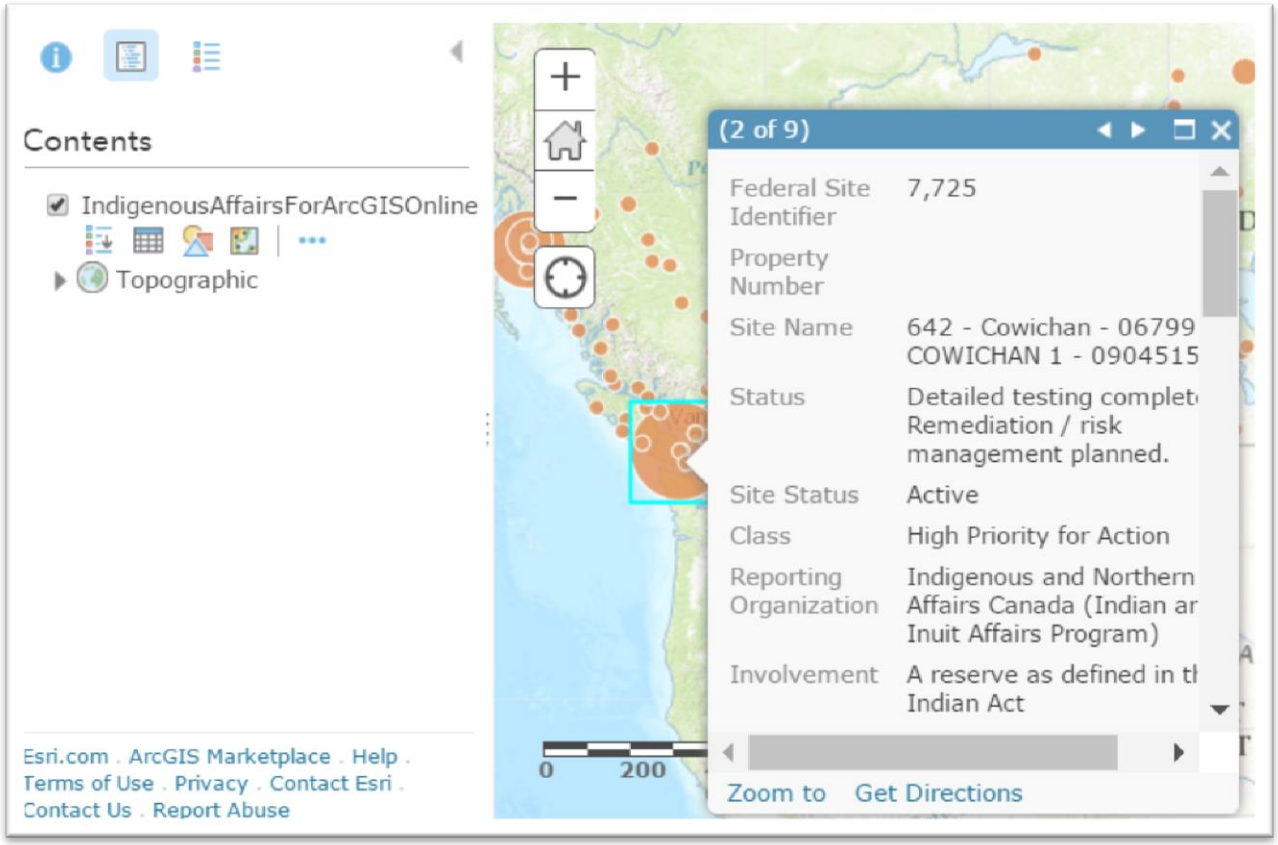


The "Save" icon allows you to save the map, a necessary step being able to share it, which the icon to the immediate right allows you do do.
So let's save what we've done so far.

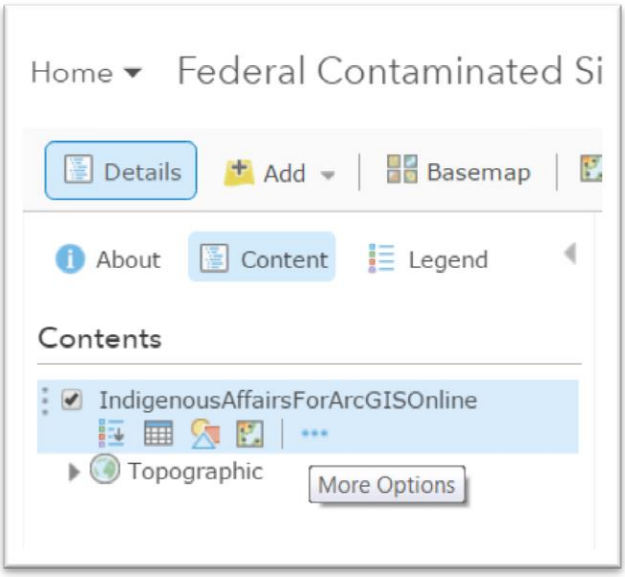
Next, we'll reconfigure the pop-up boxes. Click on any circle on the map.

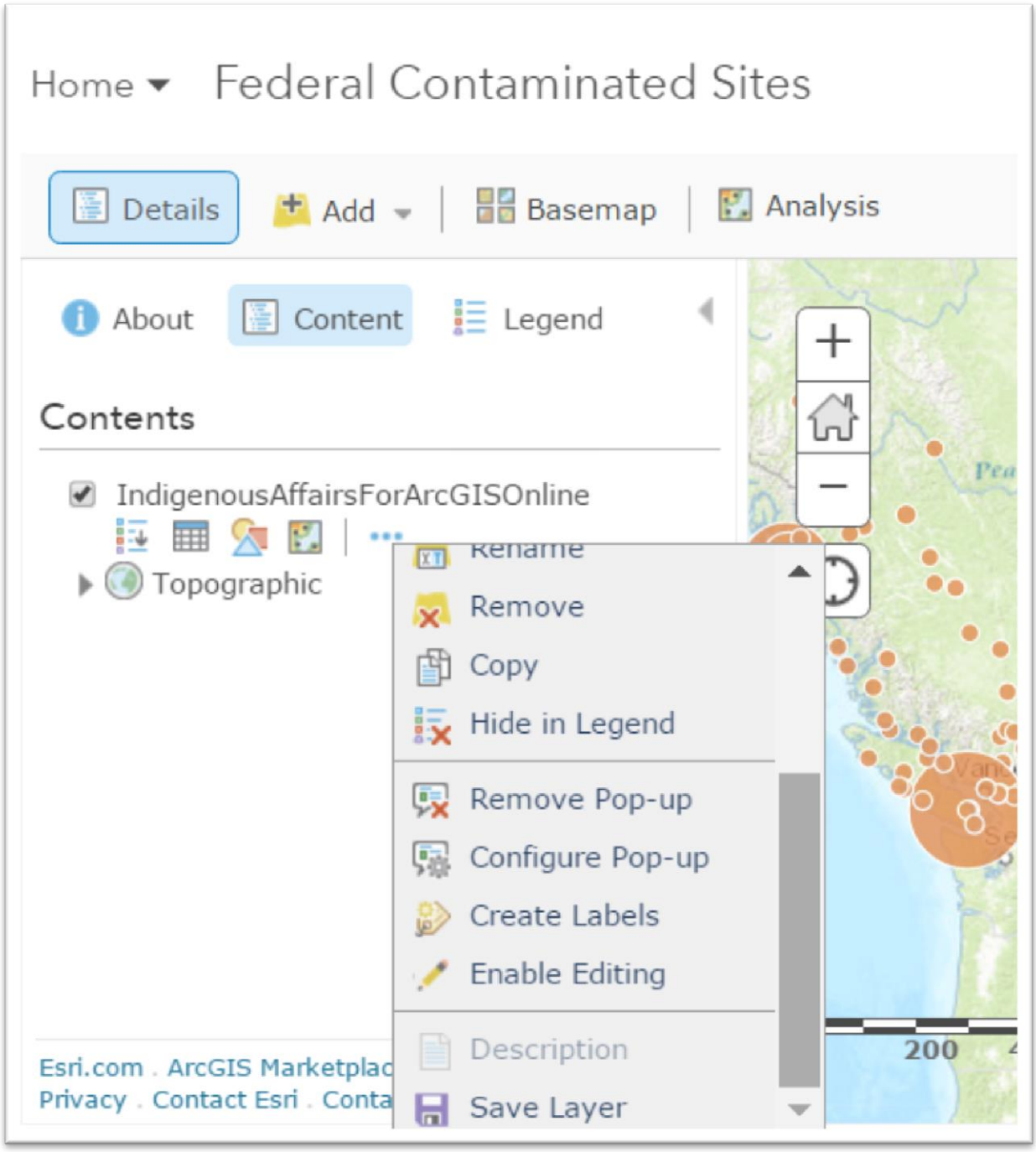


The vertical scroll bar allows you to see the remaining columns in the first view. Clicking the arrow pointing to the right, produces the remaining columns.

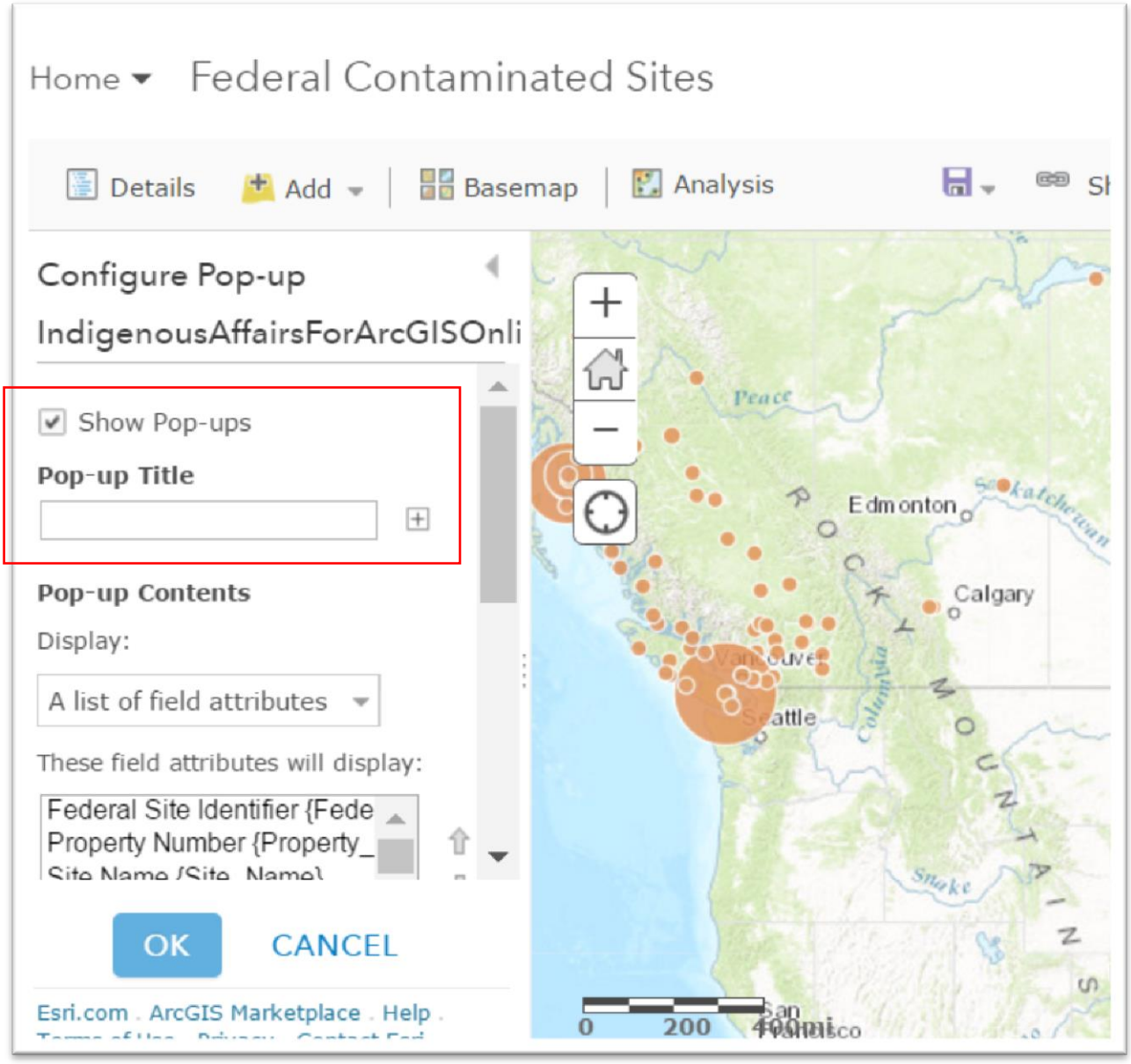


Unless there's a specific reason to do so, there's no need to burden viewers with all these details. Deciding which ones to show is an editorial decision. For the sake of this exercise, let's whittle down the selection by returning to the "More Options" menu.

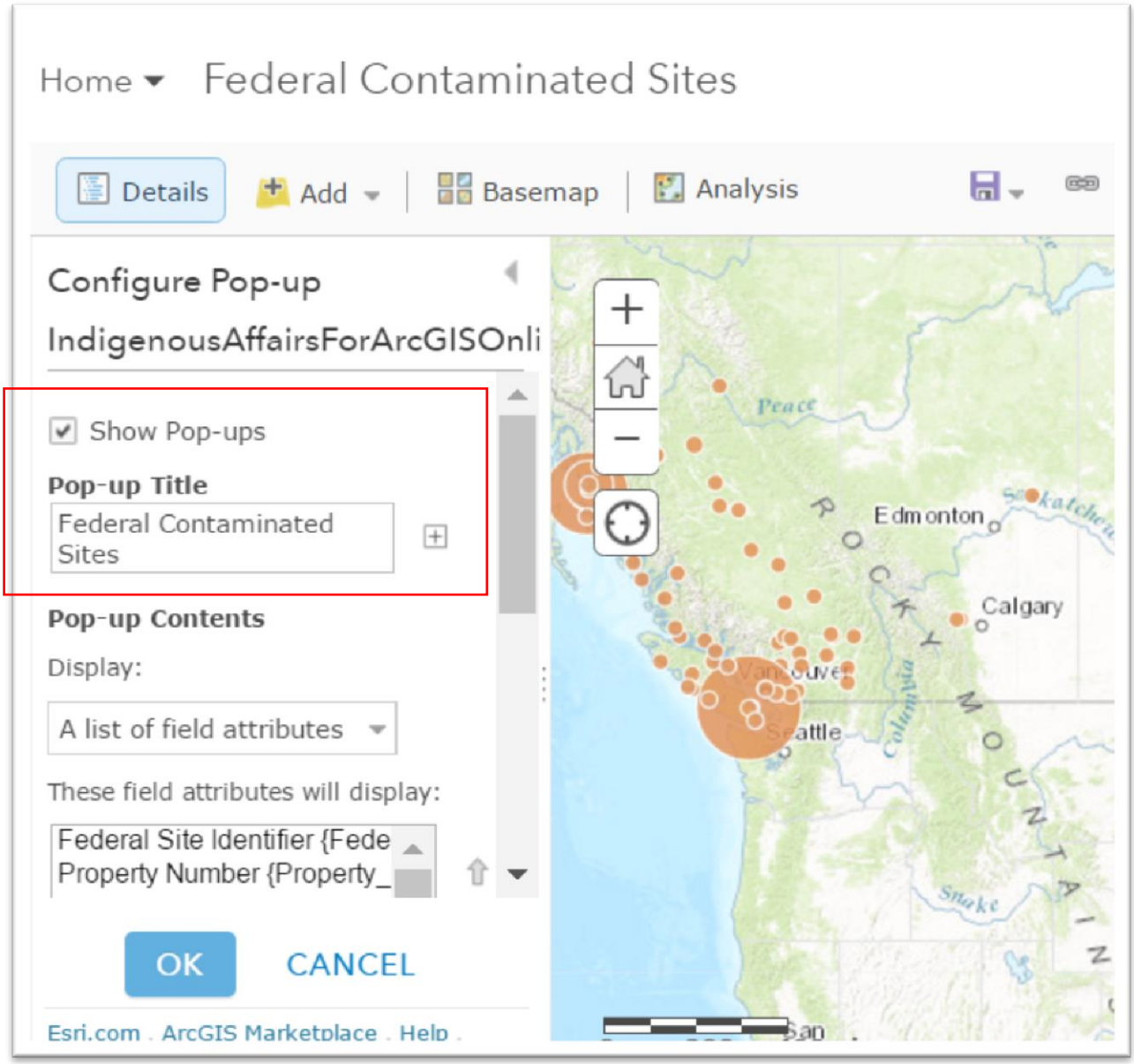



Home
Federal Contaminated Sites
Details
Add
Basemap
Analysis
About
Content
Legend
Contents
IndigenousAffairsForArcGISOnline
Topographic
Rename
Remove
Copy
Hide in Legend
Remove Pop-up
Configure Pop-up
Create Labels
Enable Editing
Description
Save Layer
Esri.com . ArcGIS Marketplac
Privacy . Contact Esri . Conta
200

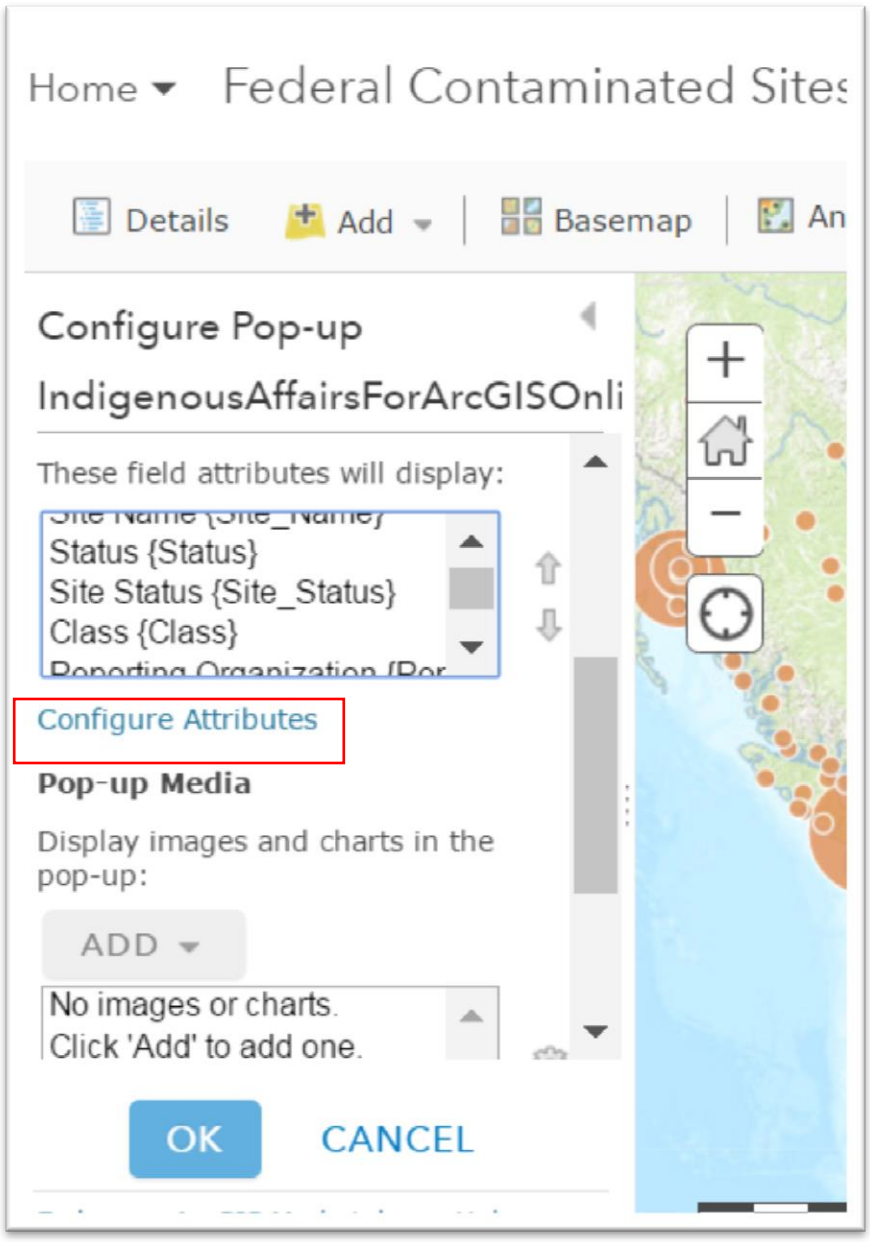
Select “Reconfigue Pop-up”, which produces a menu to the left.



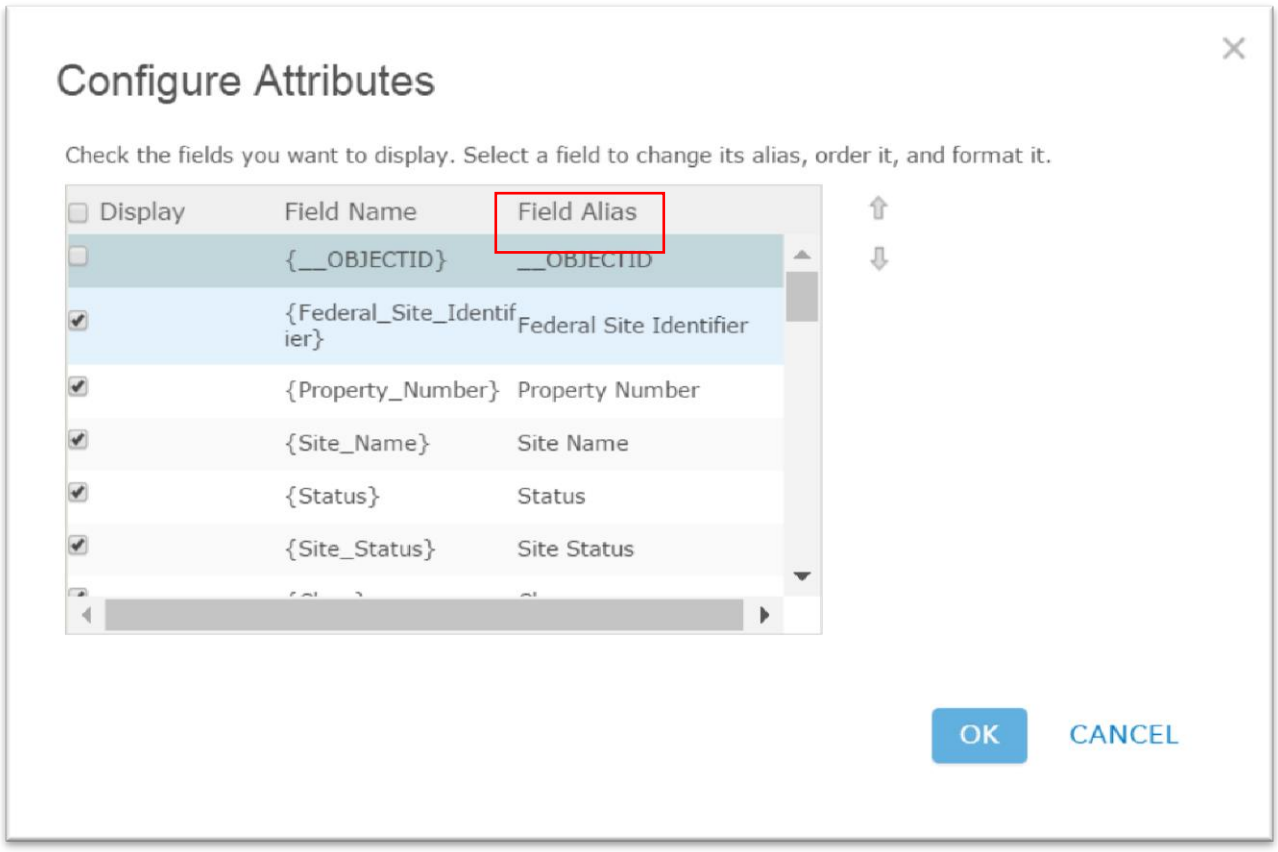
Let’s begin by givingt the pop-up a title, “Federal Contaminated Sites.”


Home
Federal Contaminated Sites
Details
Add
Basemap
Analysis
Configure Pop-up
IndigenousAffairsForArcGISOnli
Show Pop-ups
Pop-up Title
Federal Contaminated Sites
Pop-up Contents
Display:
A list of field attributes
These field attributes will display:
Federal Site Identifier {Fede
Property Number {Property_
OK
CANCEL
Esri.com . ArcGIS Marketplace . Help .
Peace
Edmonton
Calgary
Vancouver
Seattle
Columbia
Snake
ROCKY MOUNTAIN

Now use the vertical scroll bar to the menu's right to navigate a little further downward.

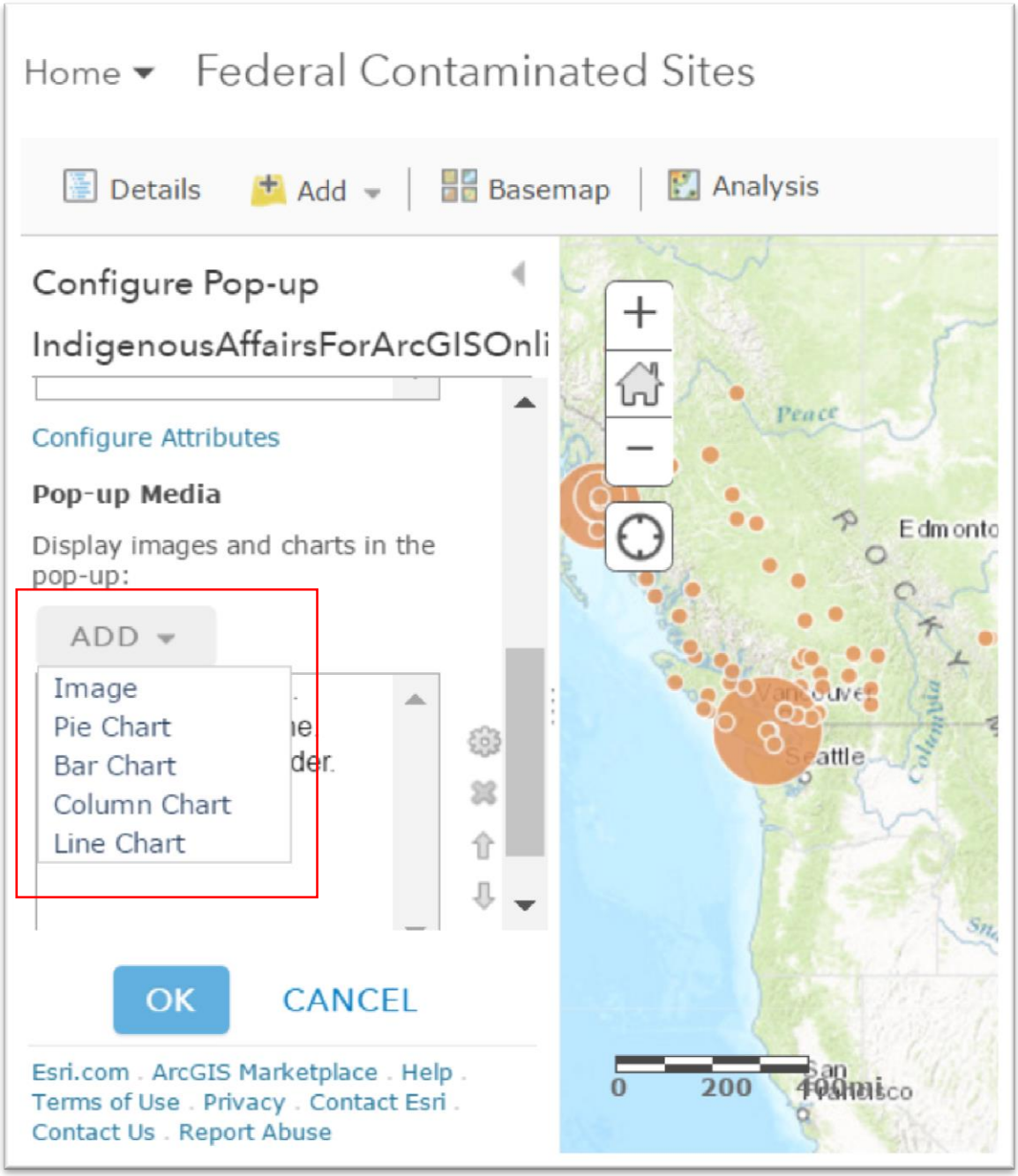


Select “Configure Attributes”.

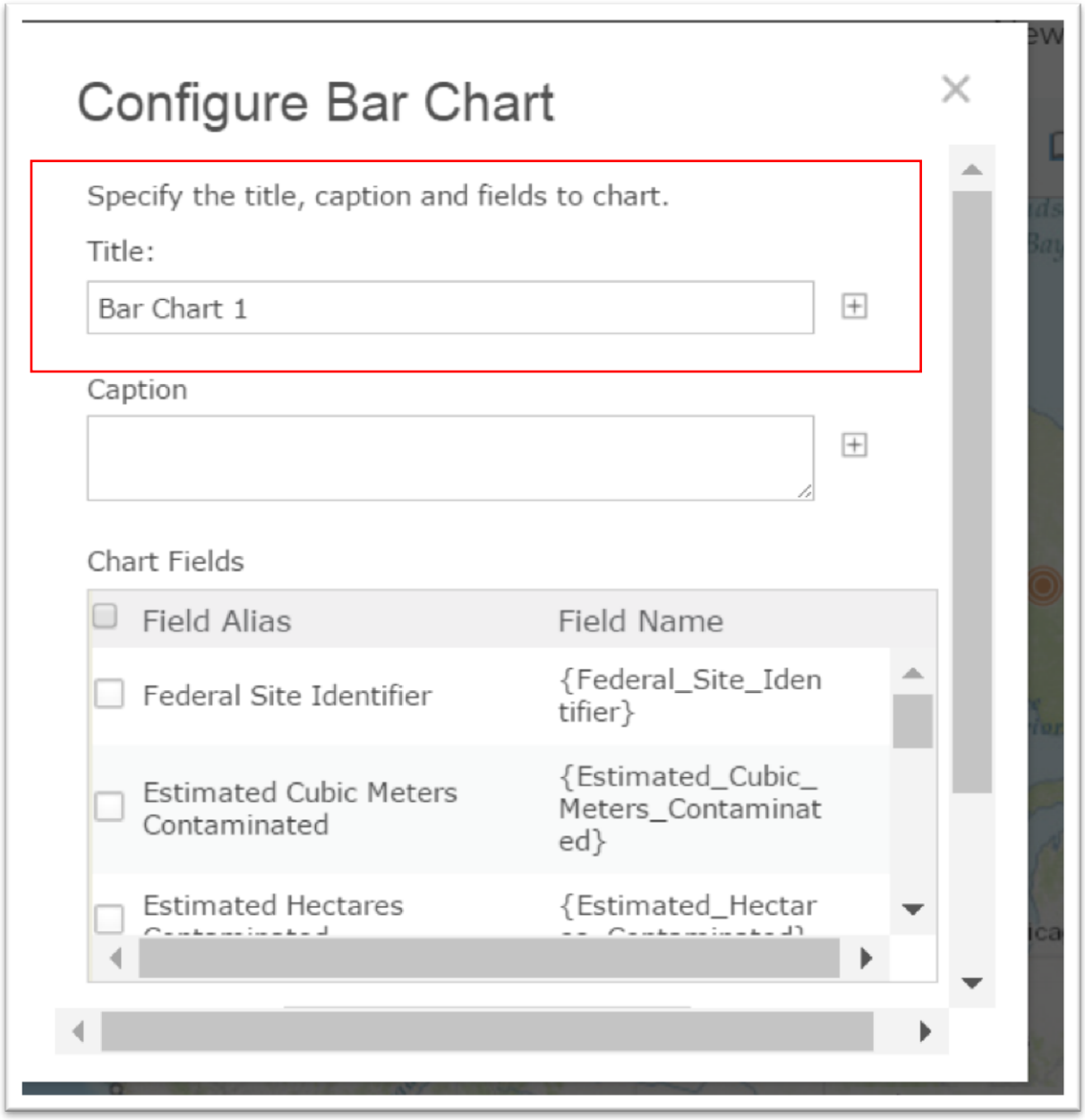


Here, we can de-select the fields we want to hide, and give the ones we want to display new labels by clicking on the titles in the “Field Alias” column. (NOTE: We learned about alias when discussing MySQL in Chapter 5.)

There are also other options. For instance, by clicking on the ADD tab, you get options for adding charts or images to your pop-up box.

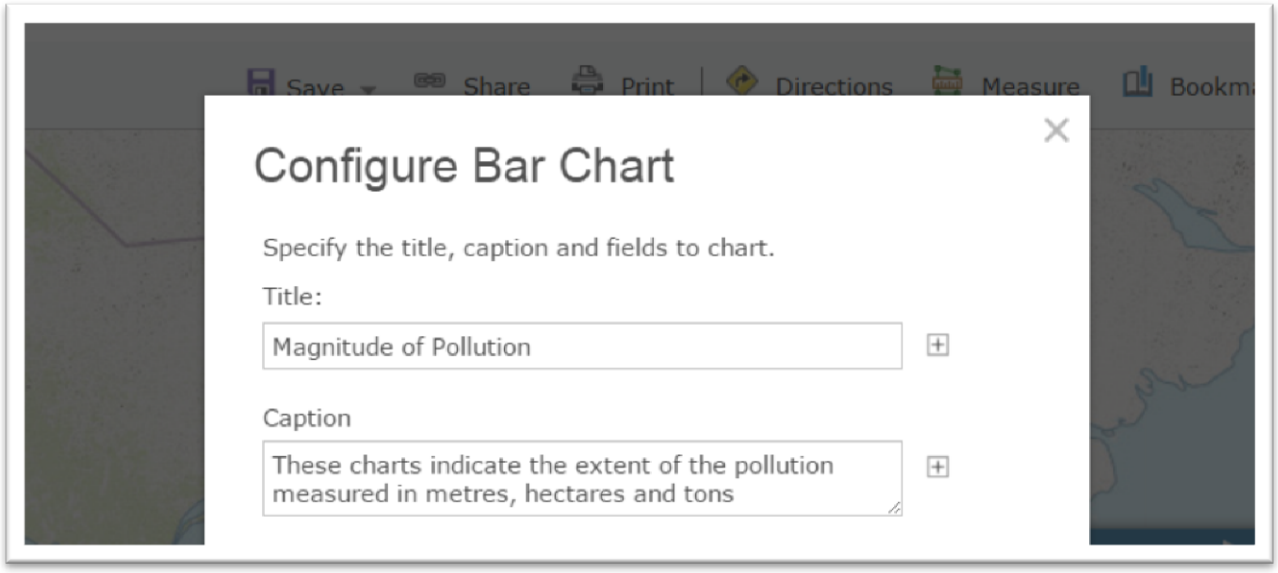


Select “Bar Chart.”

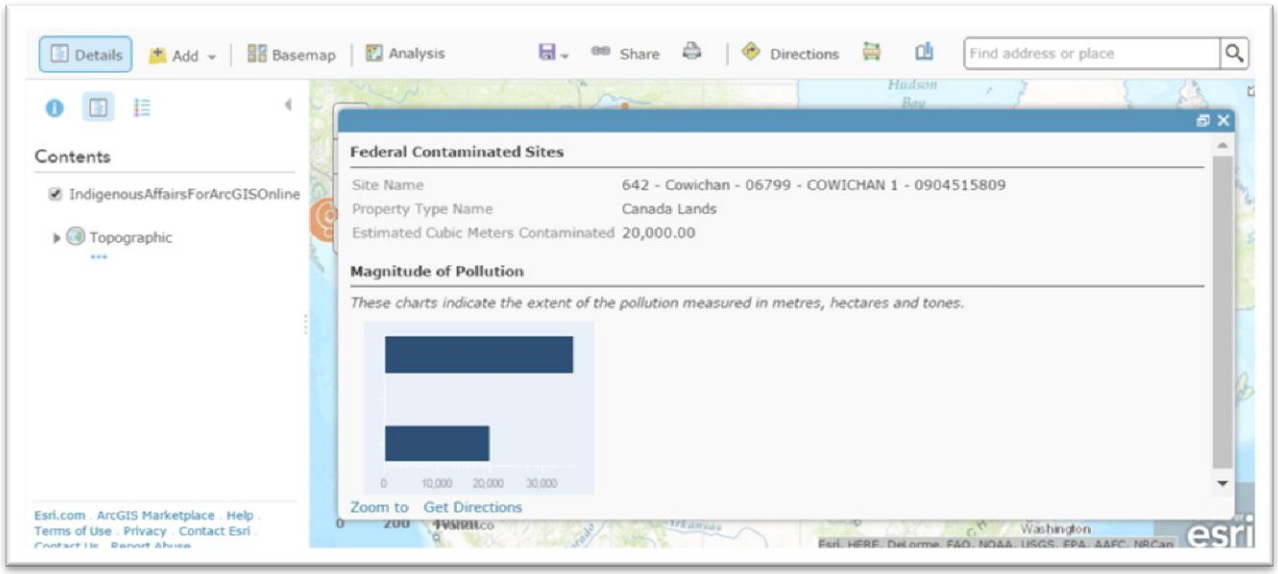


We may decide that a bar chart would help to display other values in our dataset such as the pollution’s estimated surface area. So let’s call the bar chart “Magnitude of Pollution.” And you can also give it a caption, just like you would for a photograph. You should also choose the fields that contain the values you want dispayed in your

chart.



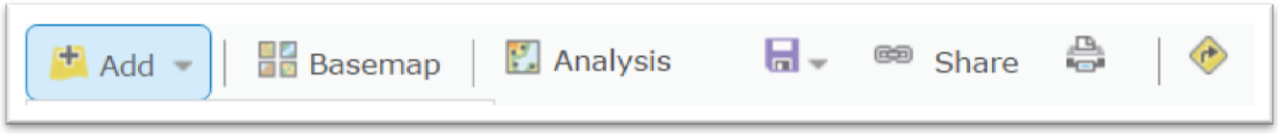
Select OK, and then the second OK tab. Now select pop-up box for the same area, and maximize it so we can see all the contents. If you need to edit the caption or title, return to the "Configure Pop-up" menu and double-click on the title you've given the pop-up box, which once again produces the "Configure Bar Chart" dialogue box. Once you're finished and happy with the result, you'll have a pop-up box that's easier to read and conveys more information.



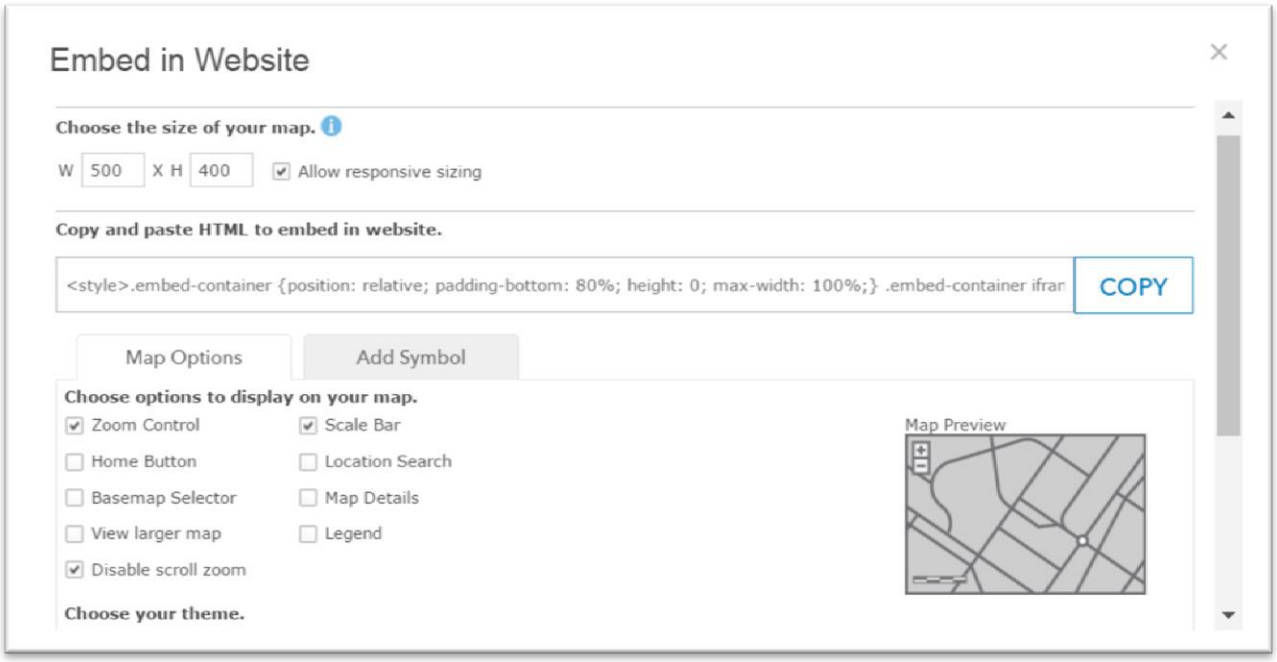
Close the pop-up box and save the result.

Task 5. Sharing and embedding the files.

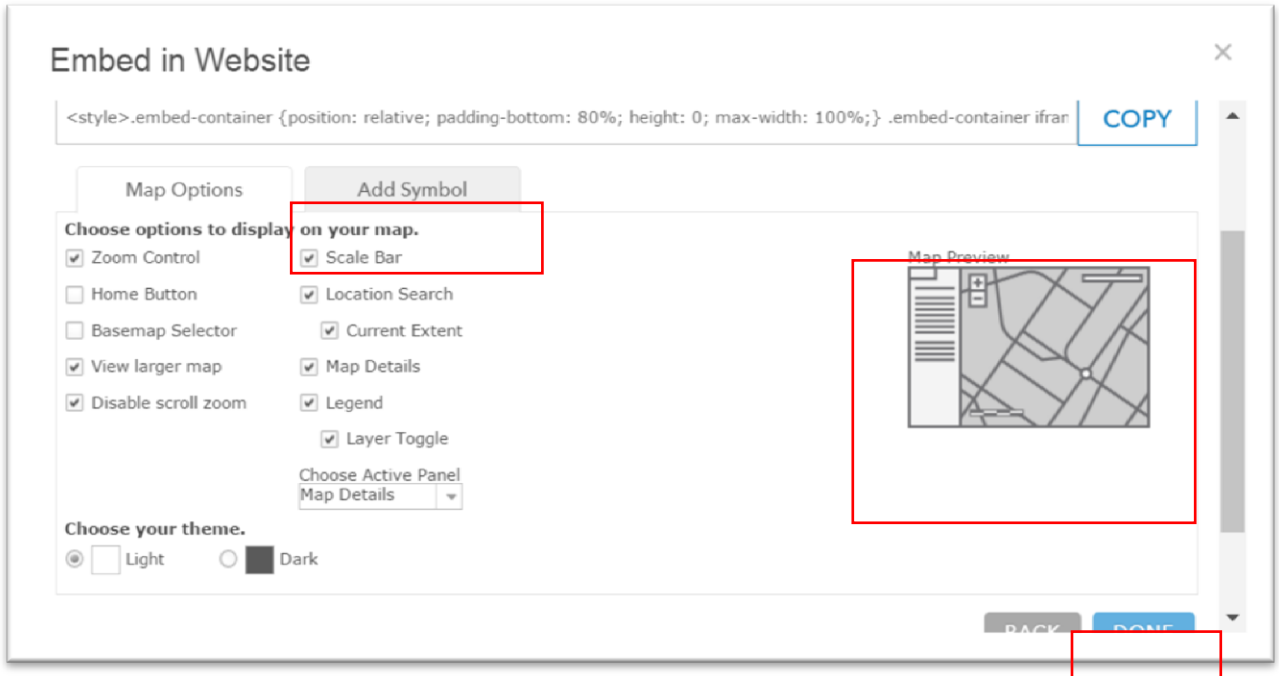
Now if you're ready to embed this visualization into your blog post, you must share it by clicking the "Share" icon.



The share icon produces a dialogue box. Make the map public, and then click the "EMBED IN WEBSITE" tab at the bottom of the dialogue box.

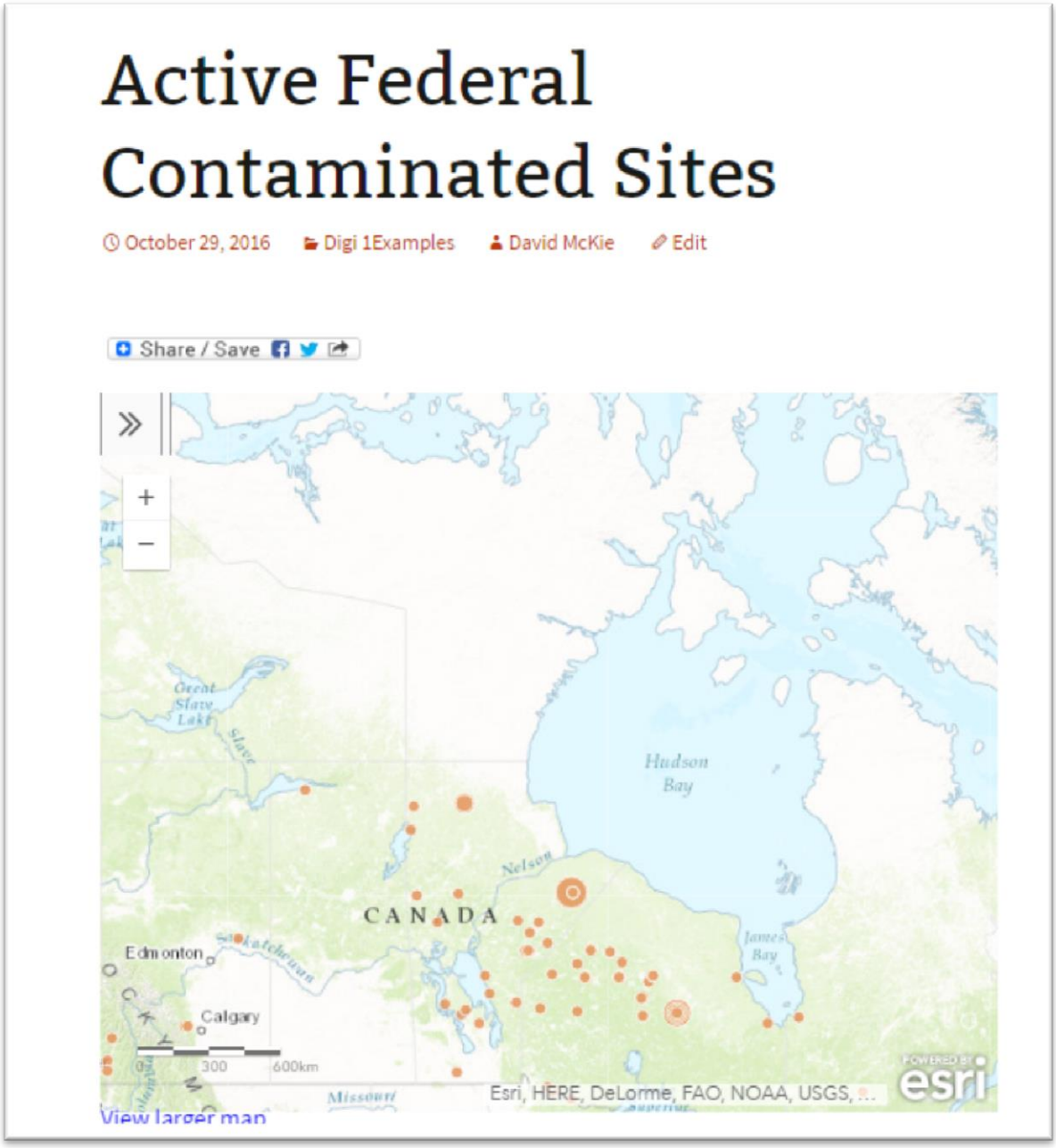


Select the map options that you want your readers to exercise. Copy the embed code. (NOTE: You can also exercise other options under by clicking on the "Add Symbol" tab at the top.)



You can check out the "Map Preview" to the right to see how the map will appear once embedded into your online story. If you're satisfied with the options you've chosen, select the "DONE" tab.

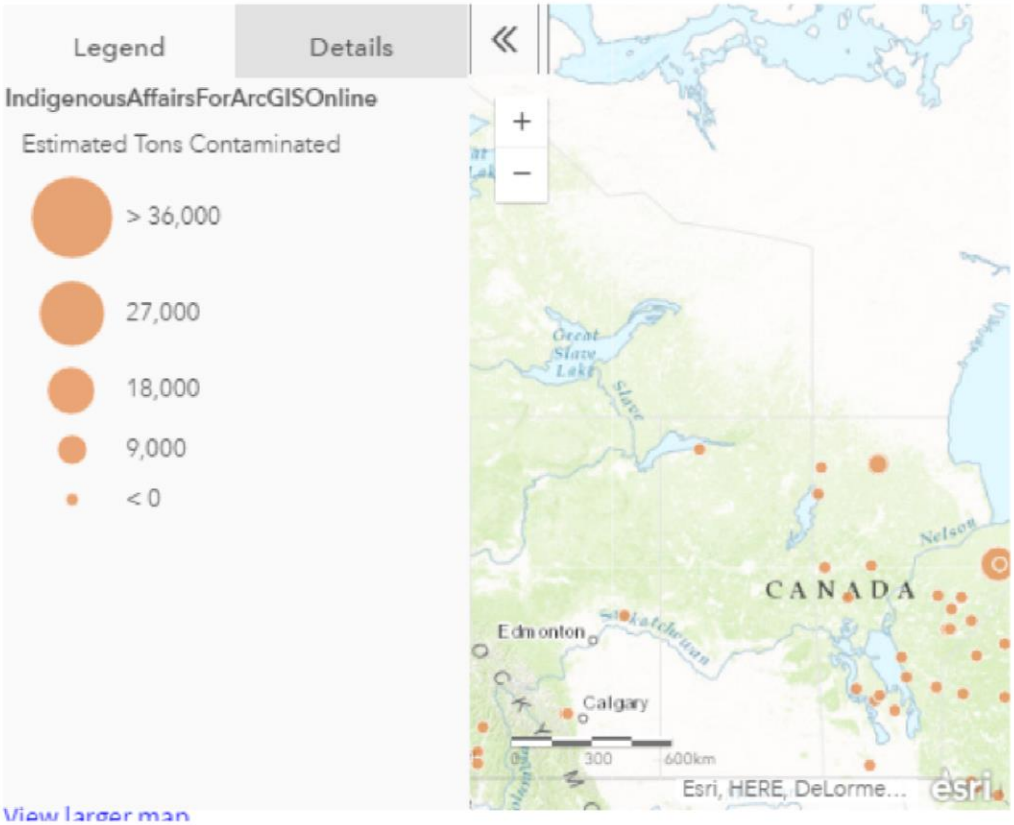
Embed the map into your blog.



Active Federal Contaminated Sites

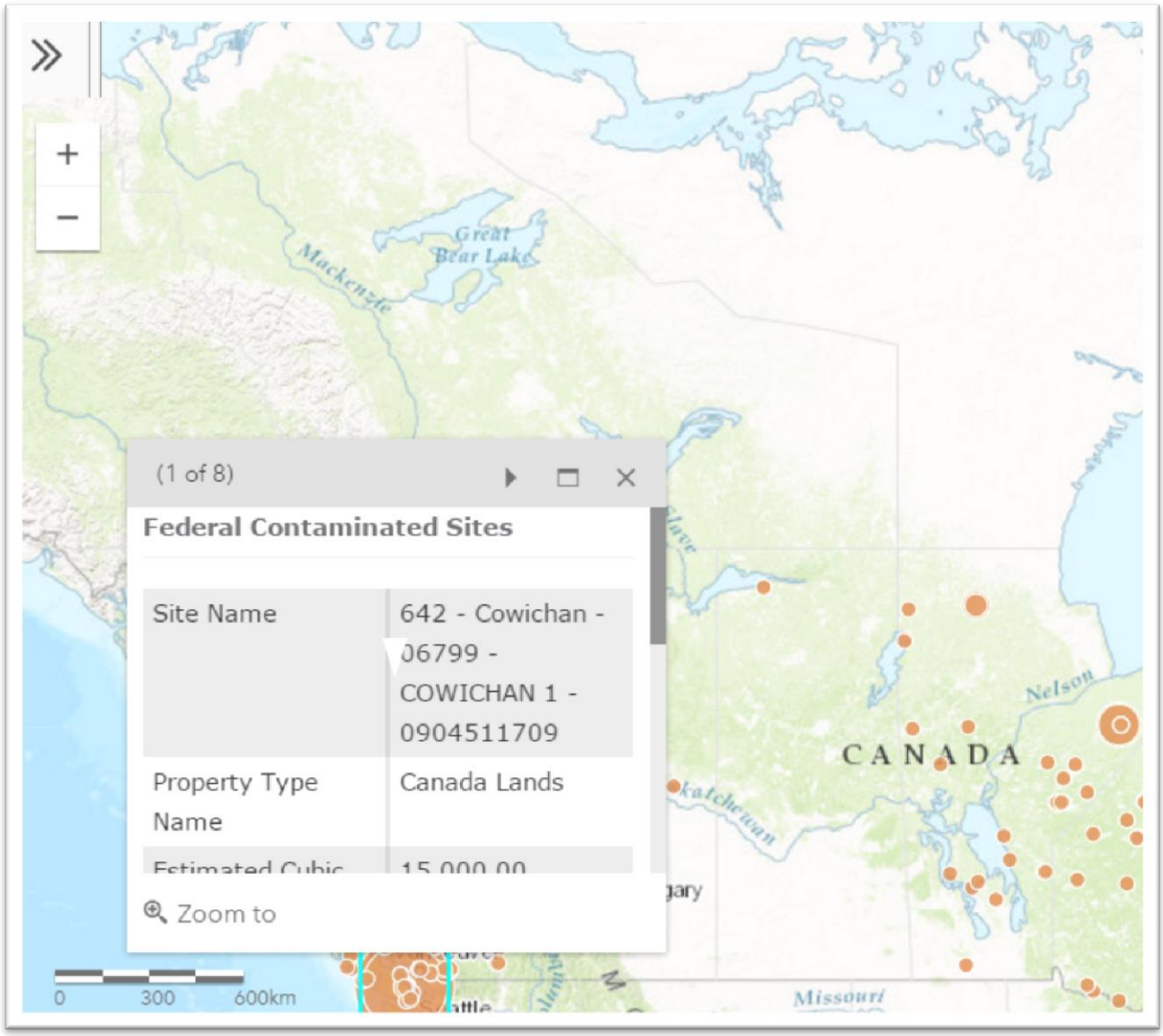
October 29, 2016 Digi 1Examples David McKie Edit

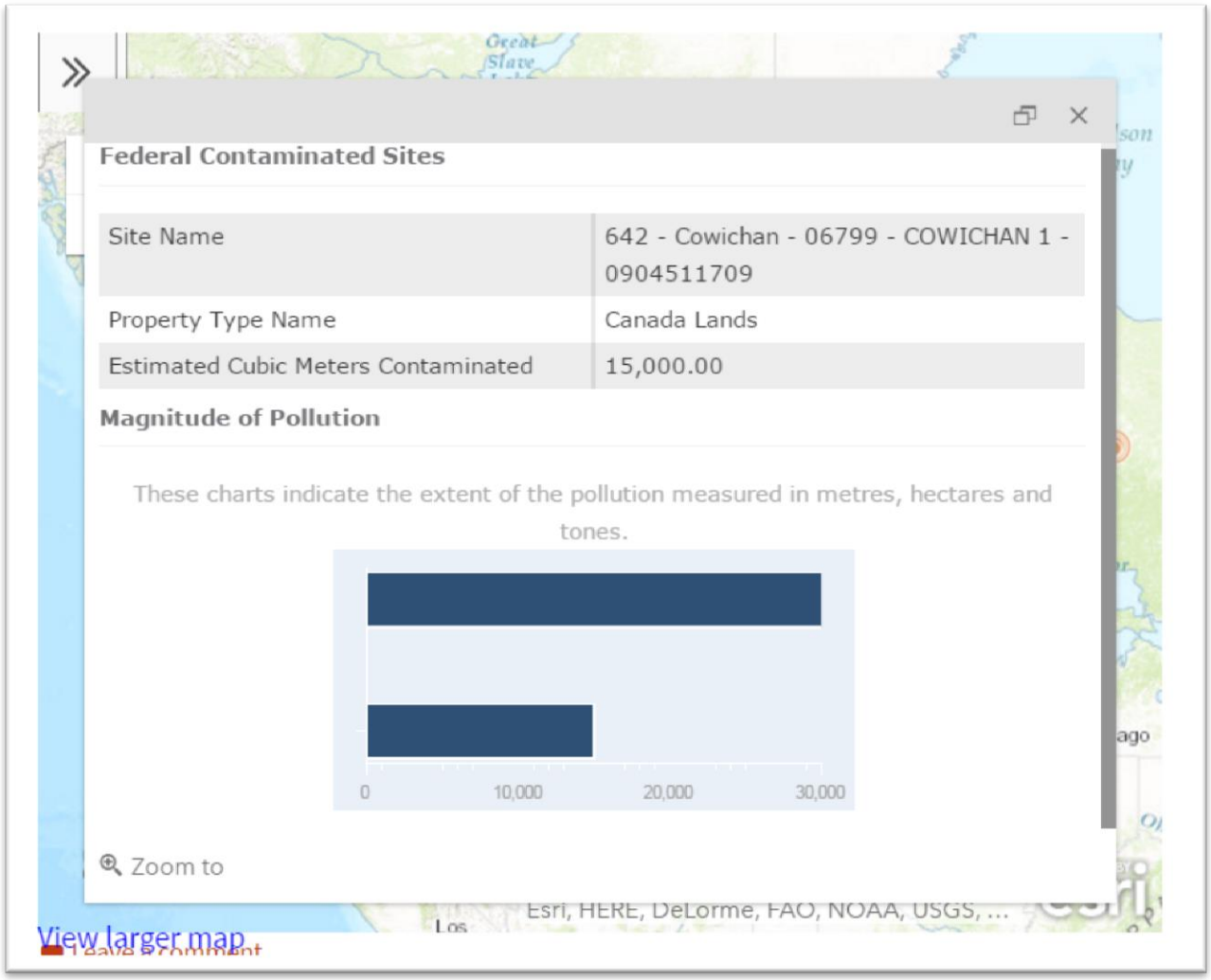
Share / Save



View larger map

Great Bear Lake
Mackenzie
Great Slave Lake
Slave
Hudson Bay
Peace
Nelson
CANADA
Edmonton
Saskatchewan
ROCKY MO
Calgary
James Bay
Missouri
Lake Superior
0
300
600km
Esri, HERE, DeLorme, FAO, NOAA, USG


(1 of 8)
Federal Contaminated Sites
Site Name
642 - Cowichan - 06799 - COWICHAN 1 - 0904511709
Property Type Name
Canada Lands
Zoom to
Great Bear Lake
Mackenzie
CANADA
Nelson
Missouri
0
300
600km



Following the same steps, you can also upload shape files that we learned about in Chapters 6 (page 121) and 7 (page 148). However, it's important to note that all the shape files components, or helper files, must be contained in a zipped folder. Just like the desktop version, ArcGIS Online needs access to all the shape file's other files.

It's also important to note that Esri, the company that owns ArcGIS Online, is continually improving this product, and in the process making it more user friendly for journalists.

As was mentioned earlier in the tutorial, you can also perform the kind of spatial analysis that we learned in Chapter 7. However, it's probably best, and less expensive, to perform your analysis in ArcGIS or Qgis, save the combined layers in a shape file, which you could then zip and upload to ArcGIS Online.

The beauty of learning many of the techniques in Data Journalist, means that they can be combined to produce results that will make your work sing online, thus setting it apart from your competitors.