

## Table of Contents

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Accessing and Opening the WRR	3
Basic Guidelines	7
■ Layer Search	7
■ Add A Place Marker	7
■ Current Location Tool	8
■ Location Search	8
■ Enable Popups	8
■ Base Maps	8
The Tutorial Tool Panel	9
■ Videos	10
■ Fact Sheets	10
WRR Layers List	11
■ Map Layers	11
■ Added Data Layers	12
Adding Data to the WRR	12
■ Add Data Via Search	13
■ Add Data Via URL	15
■ Add Data Via File	16
■ Remove Data	17
	17

<b>Find Opportunity Tool</b>	<b>17</b>
▪ Using the Find Opportunity Tool	18
▪ Find Visit Information	20
<b>The Draw Tool</b>	<b>20</b>
▪ Creating Points on the Map	21
▪ Drawing Lines on the Map	22
▪ Drawing Polygons on the Map	23
▪ Adding Text to the Map	24
<b>Location Details</b>	<b>24</b>
▪ Select Area of Interest by Uploading a Shapefile	24
▪ Select Area of Interest by Drawing	25
▪ Select by Rectangle and Selectable Layers	25
▪ Location Details Report	29
▪ Additional Location Detail Reports	29
▪ Water Resources Report	29
▪ Generating a Report	31
▪ Printing A Report	31
▪ Downloading a PDF	34
▪ Downloading a CSV File	34
▪ NEPAssist Tool	35
<b>Save Sessions</b>	<b>35</b>
▪ Create a Save Session File	36
▪ Load a Save Session File	36
<b>The Print Map Tool</b>	<b>37</b>
	38



# Watershed Resources Registry Users' Manual

This document provides a detailed and comprehensive background on how to use the WRR interactive maps. The manual covers all primary functions of the WRR maps—interacting with the application, working with layers, finding opportunities for preservation or restoration, getting location details, and saving sessions.

For those very new to a Watershed Resources Registry (WRR) project, a WRRs are state-specific interactive online mapping tools that host a series of original, consensus-based spatial analyses along with other publicly available datasets to aid professionals in environmental planning and regulatory work. They are created by EPA, USACE, US FWS and individual state departments of the environment, transportation, natural resources and others. WRRs are championed by EPA Region 3, with technical and project support from Maryland Environmental Service (MES). At the heart of each WRR are four to eight spatial analyses designed to prioritize either the preservation or restoration of wetlands, riparian areas, terrestrial habitats and/or stormwater infrastructure. WRRs, and the spatial analyses, are tailored specifically for each state by state and federal partners. These analyses score areas on a scale of one to five stars based on potential benefits and value. As of this writing, WRRs exist for Delaware, Maryland, New Jersey, Pennsylvania, South Carolina, Virginia and West Virginia.

All WRRs include an interactive online map that provides access to the findings of the WRR along with a large number of high-quality datasets. While providing access to the WRR spatial analyses, the interactive maps also provide an increasingly powerful mapping tool that can be adapted by a wide variety of working professionals to meet a wide variety of needs. WRRs now allow users to add external map services to a work session, run specialized location details reports, and save work sessions in downloadable files. As such, WRRs are dynamic mapping tools with a host of internal features designed to be flexible and adaptable to individual user needs.

## Accessing and Opening the WRR

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***We recommend using Google Chrome or Mozilla Firefox as your web browser for the best user experience.***

All WRRs can be accessed by first navigating to the Watershed Resources Registry website at <https://watershedresourcesregistry.org/>. Once there, click the State Registries drop down menu in the upper right-hand corner and select your state of interest.

Watershed Resources Registry

State Registries ▾ Contact Us What is it? ▾ FAQs

Delaware  
Maryland  
New Jersey  
Pennsylvania  
South Carolina  
Virginia  
West Virginia

Frequently Asked Q  
Have a question? Check here for answers

You will be redirected to the state's individual web page. Click on the gray View Map button.

Watershed Resources Registry

Developing A Registry State Registries ▾ Contact Us More Info ▾ FAQs

## Delaware Registry

Home / Delaware

### Background

Delaware started its Watershed Resources Registry project in March of 2016. The Delaware team was inspired by neighboring Maryland. The collaborative effort included staff from Delaware's Department of Natural Resources and Environmental Control and Department of Transportation, US Environmental Protection Agency Region 3 ,US Army Corps of Engineers Philadelphia District, US Fish and Wildlife Service, US

[View Map](#)

### Additional Resources

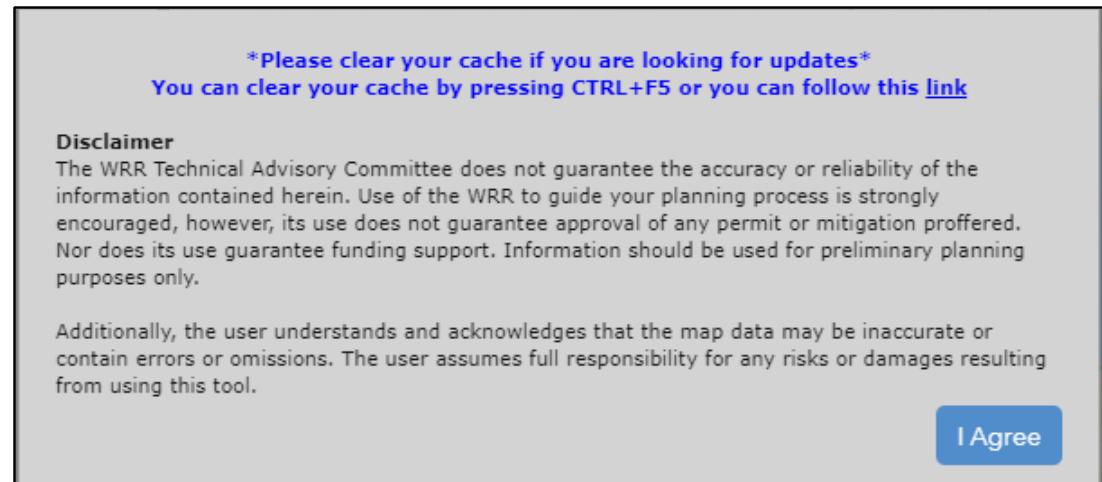
Spatial Analyses

Listing of Map Services

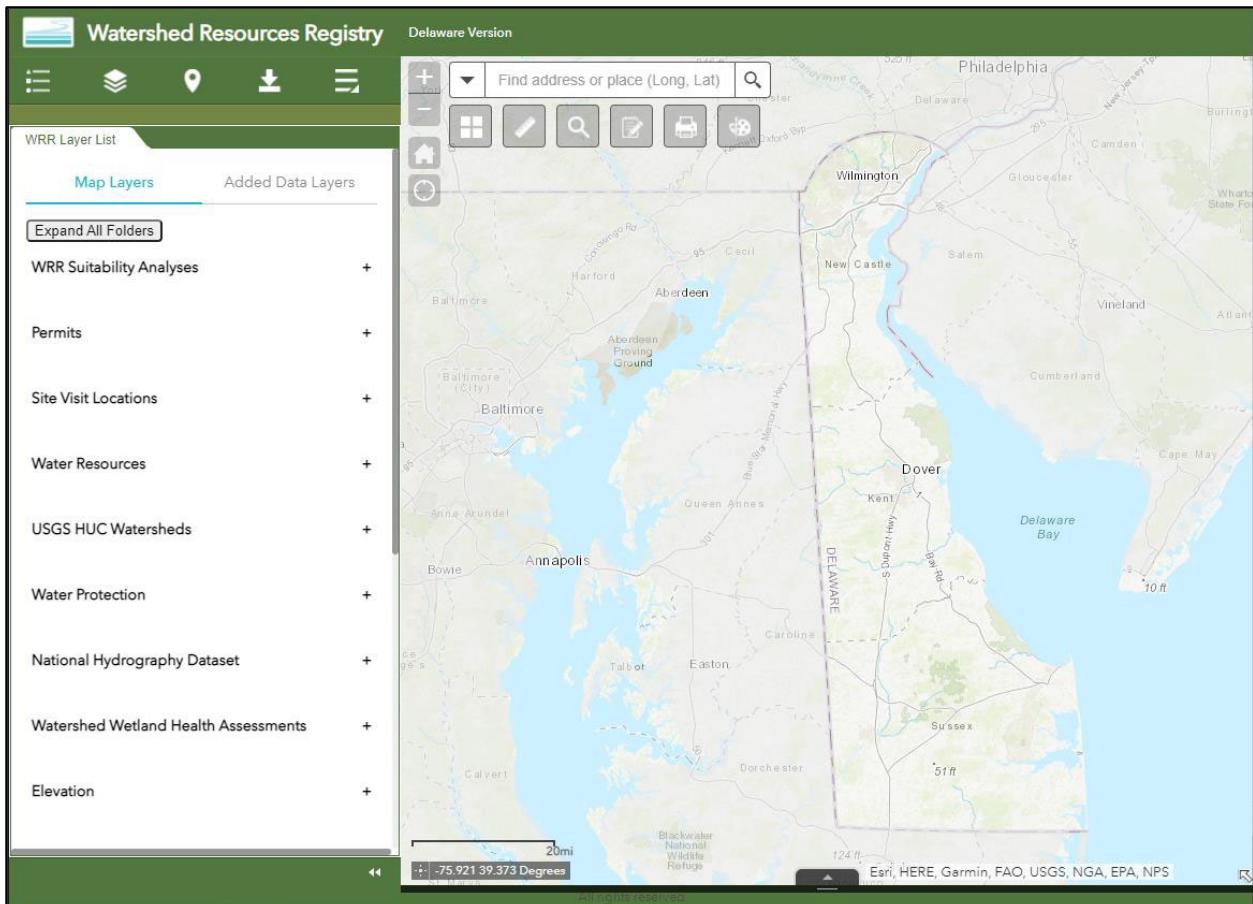
WRR User Manual

Federal Highway Administration, and Delaware Center for the Inland Bays, among others. The project was funded in part by a US Federal Highways Administration grant. If you're interested in learning more about Delaware's WRR project, please contact a representative below.

A disclaimer will appear on the screen. Click I Agree.

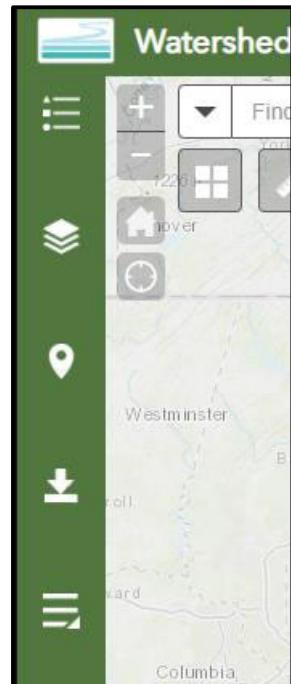
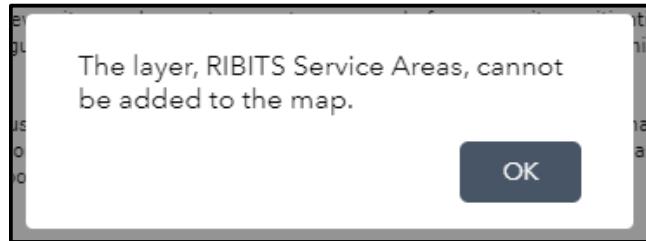


The fully loaded WRR should appear with a map on the right and an expanded tool panel on the left as seen below.



Two Important Notes:

1. Sometimes a WRR cannot connect with certain map servers. When this occurs a text box will appear listing all the data layers that could not be added to the map. Note the layer(s) name(s) since it may impact the work you are hoping to do and click ok. If this happens once or twice, it is most likely the result of a temporary server outage. If a layer regularly fails to load, please let someone on the WRR TAC know. Their names and emails are listed on the home page for your state.
2. If you ever open a WRR and find that the green tool panel is collapsed, as shown at the right, this is a sign that something is already not working correctly, and you may run into other glitches as you navigate the WRR. To correct this, clear your history or browsing cache and reload the WRR.



# Basic Guidelines

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If you are new to the WRR, please feel free to play around! You will not break the program or your computer by clicking on things. If you get lost and/or are unsure how to undo an action, click on the Home (house button) icon on the map. It will take you back to the original extent of the map.

Hovering your cursor over any button will bring up the name of the tool in question.

Throughout the tool, a '+' (plus sign) will expand a category and a '-' (minus sign) will collapse it.

Throughout the WRR, you will also encounter an ellipsis (three dots) next to various tools and layers. Clicking on these ellipses will open a drop-down menu with additional resources and features related to the tool or layer in question. When in doubt, click on these ellipses every chance you get.

If you run into issues with any feature, be it 'Save Sessions', 'Add Data', 'Location Details', etc., we recommend clearing your history or browsing cache and re-loading the interactive map. This will solve a majority issues.

Clear your cache at least once a month to ensure that you are interacting with the most up-to-date version of your state's WRR.

## ■ Layer Search

Open the WRR Layer List

Click the 'Expand All Layers' button at the top of the list.

Press the 'Control' + 'F' keys (or the 'Command' + 'F' key if you're on a Mac) on your keyboard. This activates the "Find" Function of your browser. In Google Chrome, the search bar will appear at the top of the browser on the right-hand side. In Mozilla Firefox, the search bar will appear in the lower left-hand corner of the browser.

Type a key word for the type of layer you are looking for. As you type, you will see a fraction appear. The denominator indicates the current number of text matches within the layers list. The numerator indicates the result you are currently viewing.

Click the arrows next to the text box to sort through the results. If you have expanded all layers, the WRR Layer List tool panel will move to highlight each result.

## ■ Add A Place Marker

As you are reviewing site conditions or evaluating opportunities, it can be helpful to have a visual reminder of where your project is. To add a place marker, first use the search bar. A dialogue box will appear on the map highlighting the location of your specified place. Click on the ellipsis in the lower right-hand corner of the dialogue box. Then click, 'Add a marker' to create a pushpin at that location. The blue marker will remain until you close the browser.

## ■ Current Location Tool

If your computer, tablet device, or cell phone is location-enabled, this tool will move the map to show your current physical location. This can be useful for finding yourself on the map if you are out in the field.

## ■ Location Search

There is a default search bar on the map that allows you to find an address or place. You can search for a location by entering a street address, longitude and latitude coordinates (e.g. -77.1234, 38.1234), or the common name of feature or landmark (e.g. Burnham Run, The Liberty Bell, etc.).

When entering longitude and latitude coordinates, the longitude value must be entered first and it must contain a negative ‘-’ sign.

## ■ Enable Popups

Enabling popups will allow the application to show you attribute information about a feature of interest on the map simply by double-clicking. In order to enable popups, click the ellipsis next to the layer name in question. A drop-down menu will appear. Select ‘enable popups.’ If the only option in the drop-down menu is ‘disable popups’, then popups have already been enabled for that particular layer.

*Note: Enabling popups is something that must be done on a layer by layer basis. It is not possible to enable or disable all popups at once.*

By default, all pre-loaded data layers have their pop-ups automatically enabled. Thus, someone should be able to turn a data layer on and immediately select features on the map. Manually added data layers, however, require users to enable pop-ups

## ■ Base Maps

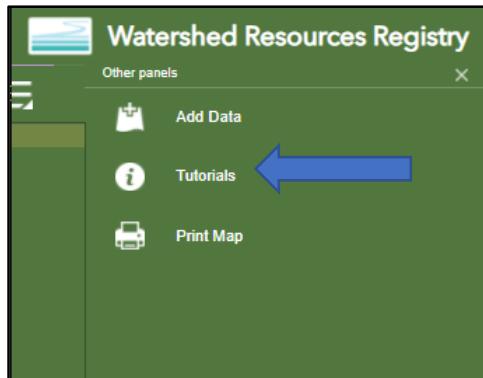
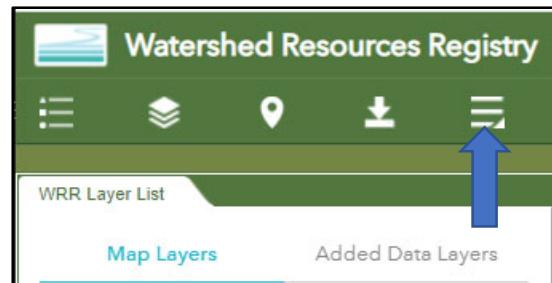
All WRRs come with a pre-loaded gallery of base maps. Some states have more robust galleries than others, but all WRRs will contain at least one aerial map, a terrain map, a road map, and a USGS 7.5” quad map.

# The Tutorial Tool Panel

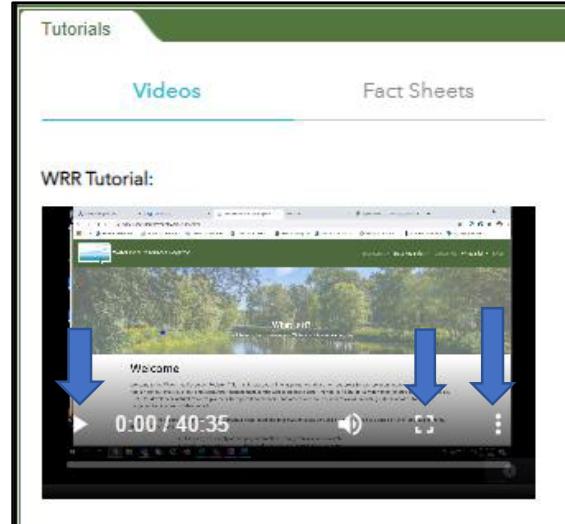
All WRRs come with a series of video and written guides to aid users as they work within a WRR and to help them troubleshoot any issues that may arise. These guides can be found in a Tutorial tool panel, under the 'More' icon.

First, navigate to the green tool bar above the WRR expanded tool panel and click on the 'More' icon.

Under the 'More' icon, you will find a list of other tool panels available to you. Click on the 'Tutorials' panel.

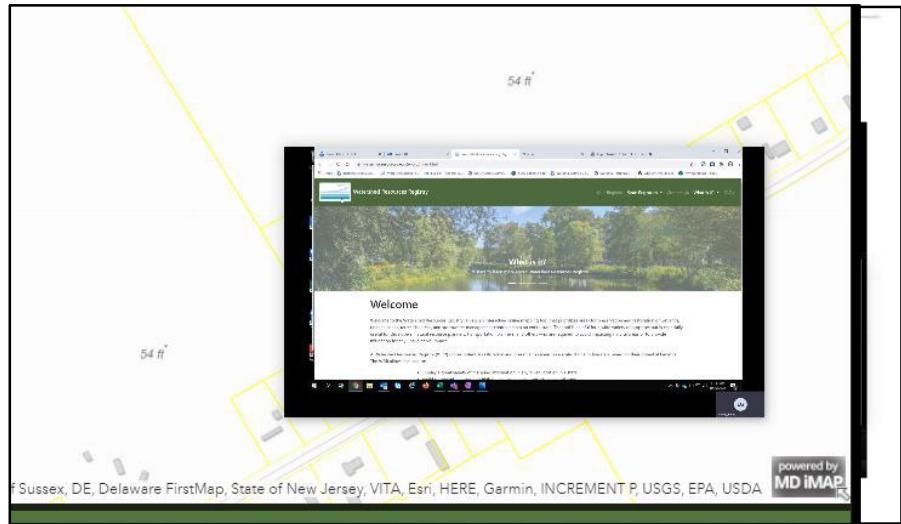


The Tutorial panel features two tabs: Videos and Fact Sheets.



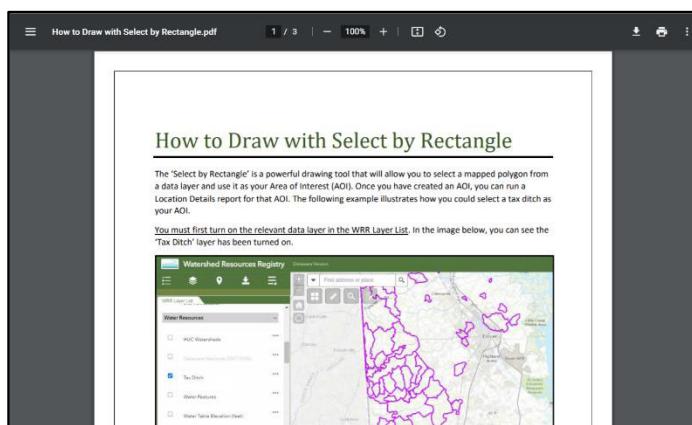
## ■ Videos

The Video tab hosts a series of short and long tutorial videos that breakdown how to use different features within WRRs. Videos can be played within the panel or made full screen. If you click on the vertical three dots, there is an option called, 'Picture in picture'. This feature will pop the video out of the tool panel and onto the map as a small, movable window. This will allow you to navigate to other tool panels and work with other features on the map, while watching the video.



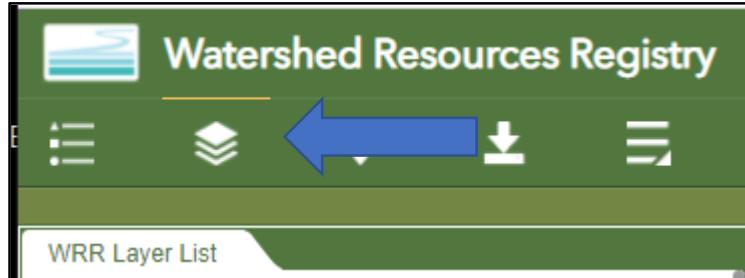
## ■ Fact Sheets

The Fact Sheet tab lists a series of hyperlinks. Clicking on these links will open a pdf in a new tab. These pdfs include written, step-by-step instructions for how to operate different tools and features within WRRs.

A screenshot of the "Fact Sheets" tab in the WRR software. The tab is highlighted with a blue underline. Below it, there are several hyperlinks: "How to Draw with Select by Rectangle: [View Here](#)", "How to Use Location Details: [View Here](#)", "How to Use the FindOpportunity Tool: [View Here](#)", "How to Add Data: [View Here](#)", and "How to Use Save Sessions: [View Here](#)".

# WRR Layers List

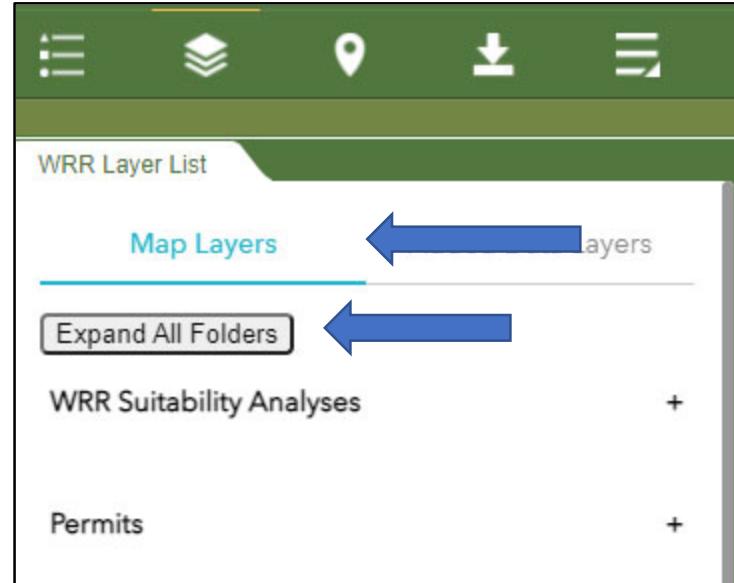
The WRR Layer List is the tool panel that contains all data layers for a WRR. This includes pre-loaded data layers that are available upon opening a WRR, and any that are added manually during a work session. The WRR Layer List will open by default when you first enter a WRR but can also be accessed by clicking the WRR Layer List icon on the green tool bar. There are two tabs available in the WRR Layers List: Map Layers and Added Data Layers.



## ■ Map Layers

The ‘Map Layers’ tab contains all the pre-loaded data layers in a state’s WRR. Every state has a different collection of data layers available. These data layers are organized in folders by topic. These folders can individually be expanded using the ‘+’ (plus sign) and collapsed using the ‘-’ (minus sign). They can also be collectively managed by clicking on the gray ‘Expand All Folders’ button.

You can perform a text-based search for a layer within the WRR Layer List by pressing ‘Ctrl’ + ‘F’ keys (or ‘Command’ + ‘F’ on Macs). A search bar will appear in the upper right-hand corner of Google Chrome (or in the lower left-hand corner for Mozilla Firefox), and you can do an exact word search query for a given layer. ***It is important to note, that you must first Expand All Folders for the search to work correctly.*** This search function will only search layers in the ‘Map Layers’ tab. If you would like to search any data layers you have added, you will need to be in the ‘Added Data Layers’ tab.



Important Note: This search will find layers that match your search term EXACTLY. For example, if you type ‘water’ into the search bar, it will only select layers with the word ‘Water’ in the title (e.g. Mean Higher High Water, Groundwater Recharge Areas, 319 Watersheds, etc.). It will NOT find layers that include water data but are titled something else (e.g. Sea level rise).

Clicking the ellipses to the right of any given layer will allow you to pull up related metadata, adjust a layer's transparency, enable pop-ups, or see attributes.

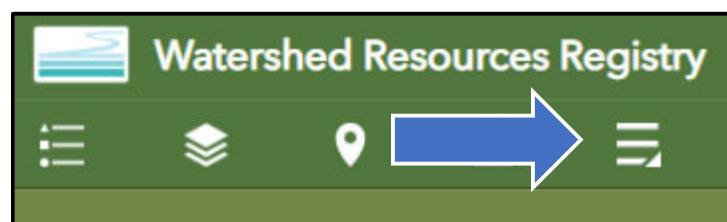
## ■ Added Data Layers

The 'Added Data Layers' tab contains all data layers that you may add during a given session. Data layers will also appear in this tab that correspond to any Find Opportunities queries you may run.

# Adding Data to the WRR

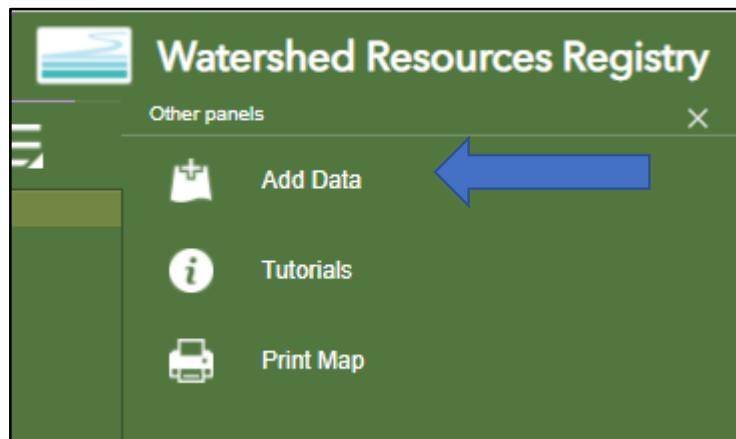
It is possible to add mapped data from outside sources into the WRR for a browsing session. This can be done via three different mechanisms: Search, URL, or Shapefile.

Start the process for adding data by clicking on the More icon shown at right on the green tool panel.

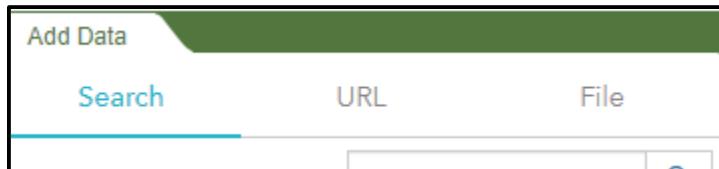


The tool bar at right should open.

Click on 'Add Data' link.



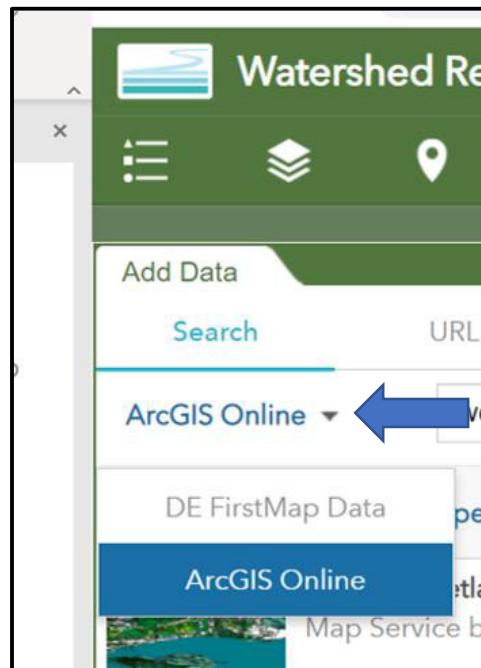
You should see three tabs at the top of the 'Add Data' panel: Search, URL, and File. These three tabs will allow you to add data to the WRR in three different ways.



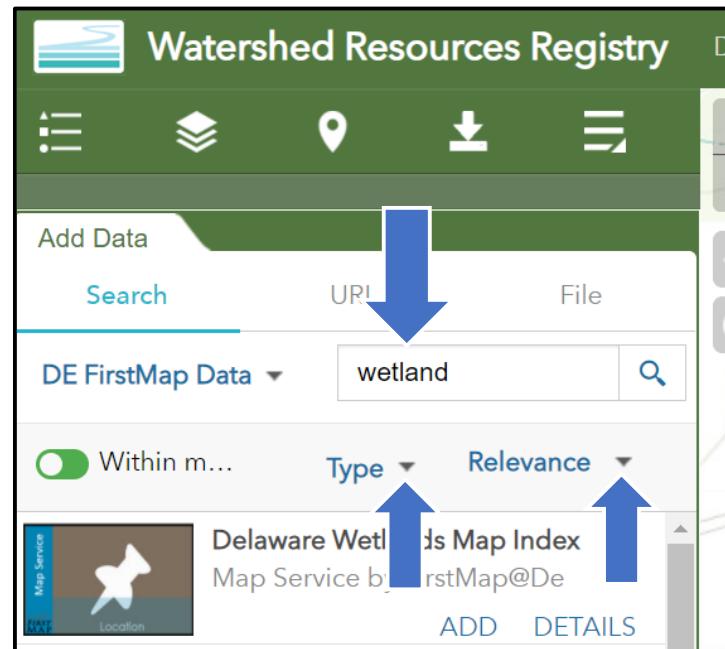
## ■ Add Data Via Search

All states are connected to the ArcGIS Online Data Portal. Some states are ALSO linked to individual state GIS data portals. To check and see if your state is connected to multiple data portals, check the drop-down menu below the search bar. If your state is connected to a statewide GIS portal, you'll have additional search options, as shown here for Delaware.

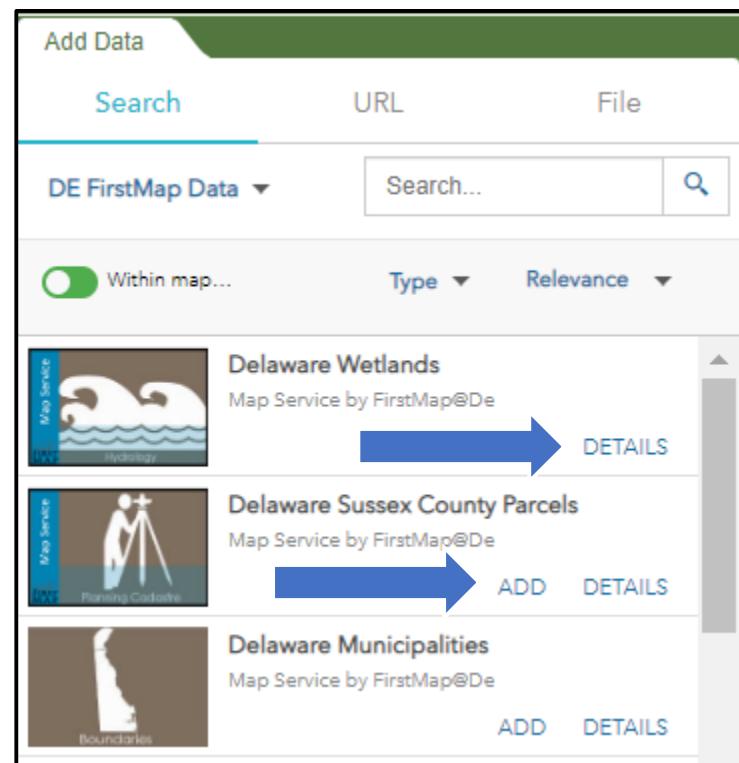
In general, if you have a state GIS dataset portal, that will be your best option for finding additional datasets. State datasets are generally more detailed, and often allow for more accuracy and precision than nationwide datasets.



You can search for available datasets by typing keywords or topics into the search bar, sorting with the type or relevance drop-down menus, or scrolling through available list. Here is an example of a keyword search for wetlands.

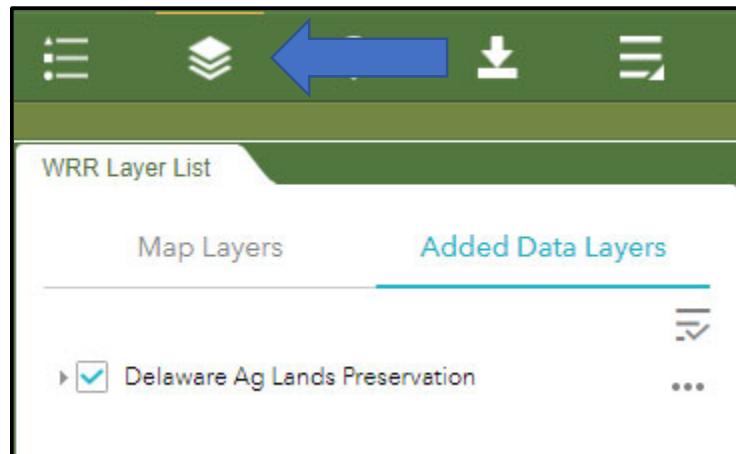


More information about a layer can be found by clicking on the blue 'Details' link. This will open a new tab with additional information. Once you have identified a layer that you would like to add, click the blue 'Add' link. The word should transform to a blue 'Remove' link, and the dataset should appear visible in the map on the right.



To view the data that you have just added on your map, click on the WRR Layer List icon. When the WRR Layer List opens, click on the ‘Added Data Layers’ tab. You should now see the data layer that you have just added.

Checking or unchecking the box next to the layer in question will turn its visibility on and off within the map. For additional information or tools, click on the ellipses to the right of the layer name to: Zoom to the data, move the layer up and down, alter the transparency of the layer, or show item details.



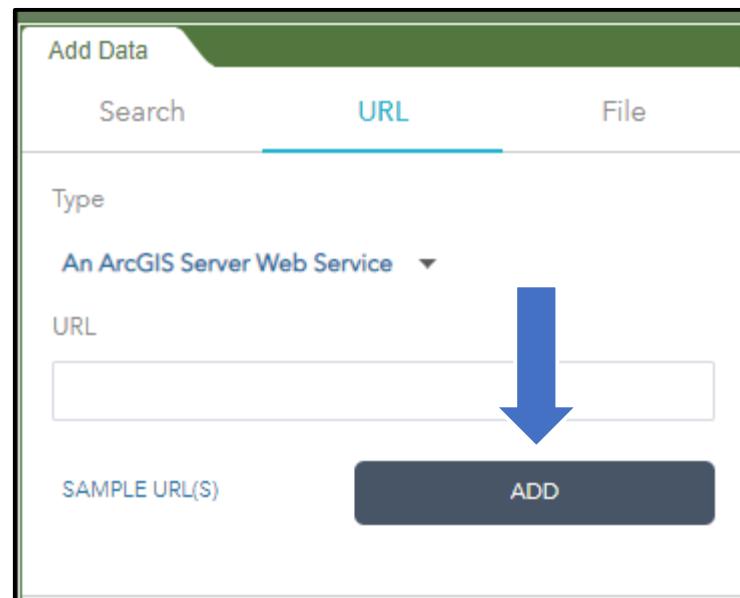
## ■ Add Data Via URL

If you have a map service that you would like to add to the WRR during a browsing session, and it is not available in the search tab, it may be possible to add that data through a Uniform Resource Locator (URL). A URL describes a unique location on the Internet, an intranet, or even a file on your computer.

Open an entirely new tab on your browser and navigate to the data source in question. Many map services will have a specific URL listed within the Metadata that can be copied and pasted elsewhere. Copy that link. (You can also use the Ctrl + C (or Command + C on a Mac) keyboard shortcut.)

Navigate back to the browser tab where the WRR is open. In the Add Data panel, click on the URL tab and paste the URL in the text bar. (or the Ctrl + V keyboard shortcut).

Click on the ‘Add’ Button. The data should appear on the map.



Navigate to the ‘WRR Layer List’ and check under the ‘Added Data Layers’ tab to ensure that the Add was successful and the layer is visible. If the layer is not visible, navigate back to Add Data panel, delete the URL in the search bar, and try it a second time.

If there is an error with adding the map service, small gray text will appear in the lower left-hand corner of the panel, alerting you to the nature of the error.

## ■ Add Data Via File

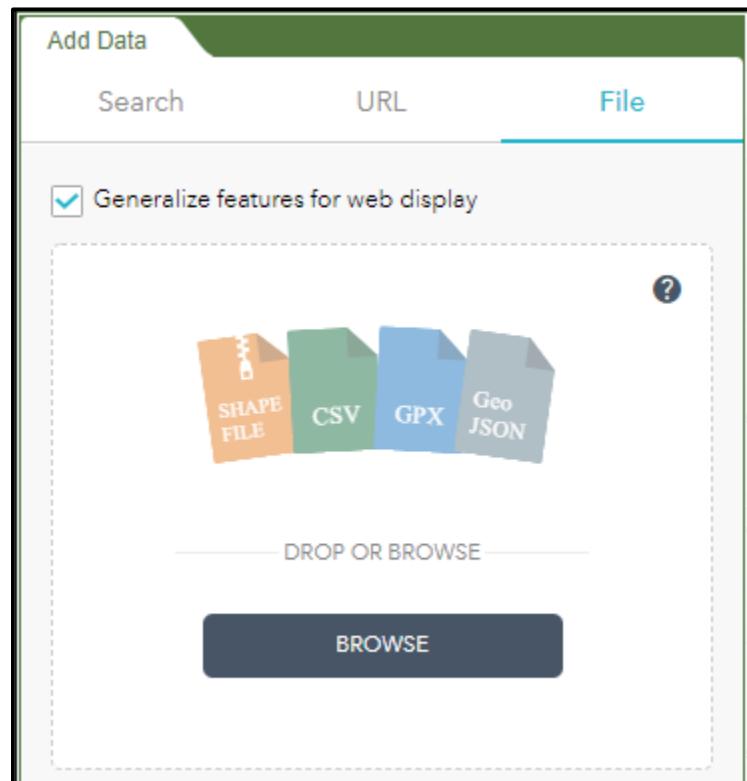
It is also possible to add data via a file upload. The WRR can support zipped Shapefiles, CSV, GPX, and Geo JSON files. Within these files, a maximum of 1000 features are allowed.

Navigate to the ‘File’ tab and click on the ‘Browse’ button. This will allow you select a saved file from your computer, DropBox, etc.

Once you have added the file in question, navigate back to WRR Layers List and the ‘Added Data Layers’ tab to ensure that it has been added.

If you experience difficulties with the Add Data tool, clear your browsing history, reload the WRR, and try again.

When adding a CSV file, WRRs can only map points (not polygons) and thus there must be a physical address in the data. This can either be longitude and latitude coordinates or street addresses.



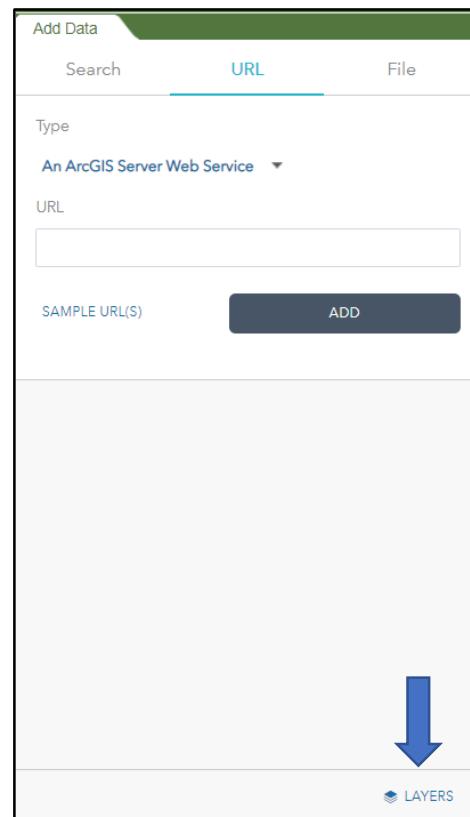
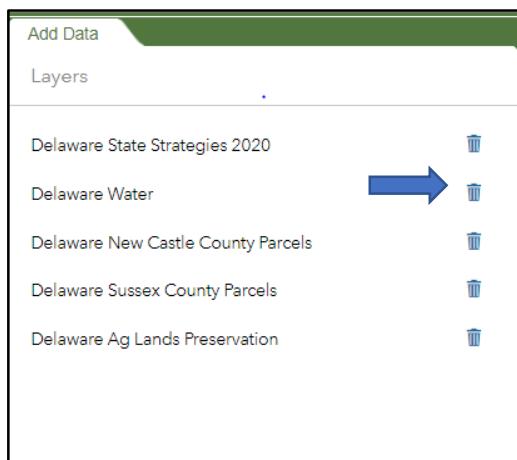
## ■ Remove Data

All external data that is added during a work session can be removed.

Navigate to the lower right-hand corner of the ‘Add Data’ panel and click on the blue ‘Layers’ link.

This will take you to a panel with a list of all the layers you have added in your session. Click on the blue Trash Can icon to remove a layer.

This will remove the data from the map and the WRR Layer List.



## Find Opportunity Tool

As noted in the beginning of this manual, each WRR includes four to eight spatial analyses designed to prioritize the preservation or restoration of wetlands, riparian areas, terrestrial habitats and/or storm-water infrastructure. The Find Opportunity Tool will allow you to quickly find opportunities in any given watershed, county or other geographic area that meet your needs.

Areas are scored from one to five stars, with five-star areas representing the best opportunities. When searching for preservation opportunities, please note that higher scores indicate higher quality/more pristine sites. The inverse is true for restoration opportunities; a higher score indicates a lower quality/more degraded site.

When you click on the Find Opportunity Tool button, a dialogue box will open. Two tabs will appear at the top of the box: Find Opportunity and Find Visit Information. Make sure that the tab you desire is bolded in black, before entering the pertinent search information.

## ■ Using the Find Opportunity Tool

Make sure the Find Opportunity tab is selected across the top. It will appear bold and underlined.

You can enter as many restrictions or as few as desired. The only information you must enter is the type of Opportunity you're looking for (e.g. Wetland Restoration, Riparian Preservation, etc.).

If desired, click the drop-down menu for the county you're interested in. This will restrict candidate sites to that county only.

Next, there is a drop-down menu labelled 'Select a Watershed'. Depending on the state you are working in, this could include HUC 12s, HUC 8s, and/or other watershed selections.

The Watershed menu is dependent on the county search. If you select a county, only the watersheds that intersect that county will appear as options.

Select a score (number of stars) and score operator if so desired. The score operator will allow you to search for a range of scored opportunities (i.e. If you're looking for sites that are four or five stars, you could select '4 stars' and '>=' OR you could select '3 stars' and '>' ).

Once you have input all your desired search criteria, click the Search button.

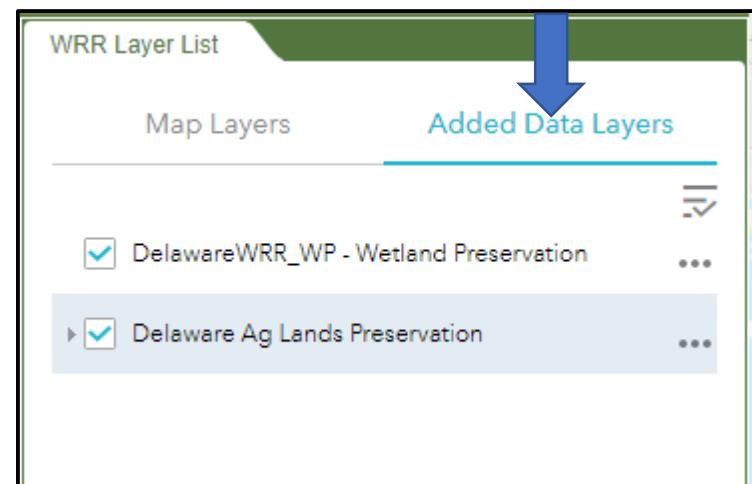
The WRR map will find all the opportunities that meet the criteria you entered and will add a new layer to your map. This layer can be found under the 'Added Data Layers' tab of the WRR Layer List.

*Note: The FindOpportunity tool allows only a single results layer at a time. The visible data layer will always reflect that most recent constraints input in the 'Find*

The screenshot shows the 'FindOps' application window. At the top, there are two tabs: 'Find Opportunity' (which is selected and bolded) and 'Find Visit Information'. Below the tabs, there are several search parameters:

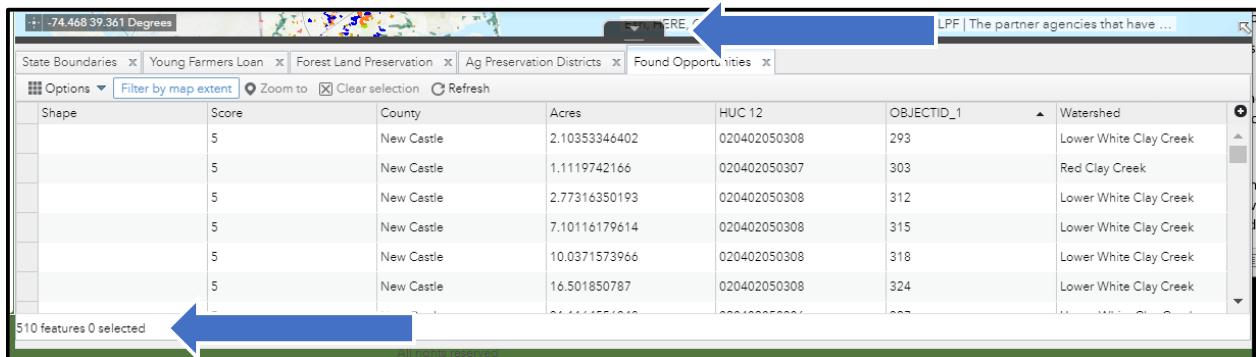
- 'Select a county:' dropdown set to 'All Counties'.
- 'Select a Watershed:' dropdown set to 'All Watersheds'.
- 'Select Score:' dropdown with options for 1, 2, 3, 4, and 5 stars.
- 'Select Score Operator:' dropdown with options for '=' (selected), '>', 'Any Area', and '<'.
- 'Where Acres is Greater Than (>):' dropdown set to 'Any Area'.
- 'Where Acres is Less Than (<):' dropdown set to 'Any Area'.

A large blue 'Search' button is located at the bottom of the search area.



*Opportunity Tool'. If you run a new query (regardless of category) the data layer will update to reflect the new query's constraints.*

In addition to adding a new layer to your map, an Attribute table will appear at the bottom of the window. This table shows all the opportunities in tabular form.



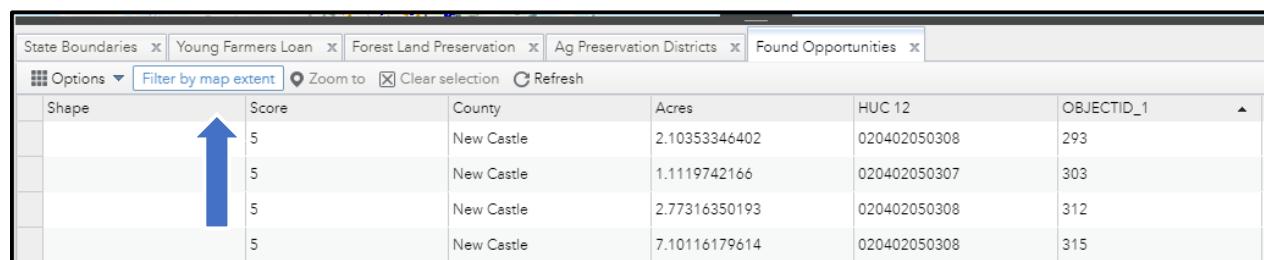
A screenshot of a software interface showing an attribute table. The table has columns: Shape, Score, County, Acres, HUC 12, OBJECTID\_1, and Watershed. There are 6 rows of data. A blue arrow points to the top-left corner of the table, where it says "510 features 0 selected". Another blue arrow points to the top of the table, indicating a collapse/expansion button.

Shape	Score	County	Acres	HUC 12	OBJECTID_1	Watershed
	5	New Castle	2.10353346402	020402050308	293	Lower White Clay Creek
	5	New Castle	1.1119742166	020402050307	303	Red Clay Creek
	5	New Castle	2.77316350193	020402050308	312	Lower White Clay Creek
	5	New Castle	7.10116179614	020402050308	315	Lower White Clay Creek
	5	New Castle	10.0371573966	020402050308	318	Lower White Clay Creek
	5	New Castle	16.501850787	020402050308	324	Lower White Clay Creek

The solid black tab at the top of this table can be used to collapse, expand, or adjust the size of the table.

It may take a few moments for all the opportunities to load. Once they do, the total number of features identified will appear in the lower left-hand corner of the table. If the number of opportunities is too large, consider adding additional constraints to make your potential sites more manageable to sift through.

When working in the attribute table, be sure to note whether the 'Filter by map extent' is on or off. If the 'Filter by map extent' button is selected and you double click on a cell in the attribute table, the map will zoom to your selected site, and the features listed in the attribute table will be reduced only to those visible on the map. To return the original set of features, you will need to turn off the 'Filter by Map Extent' button. If the 'Filter by map extent' is not selected and you double click on a cell in the attribute table, the map will zoom to the site, but the features listed will remain the same.



A screenshot of the attribute table from the previous image, but with a blue arrow pointing up next to the column headers. This indicates that clicking on a header allows for sorting the data by that column.

Shape	Score	County	Acres	HUC 12	OBJECTID_1	
	5	New Castle	2.10353346402	020402050308	293	
	5	New Castle	1.1119742166	020402050307	303	
	5	New Castle	2.77316350193	020402050308	312	
	5	New Castle	7.10116179614	020402050308	315	

Click the heading of any column to sort via attribute. Double click any individual row within the attribute table to zoom to the location on the map that row represents.

## ■ Find Visit Information

The Find Opportunity Tool also supports finding records of field visits that other WRR users may have recorded and added to the WRR.

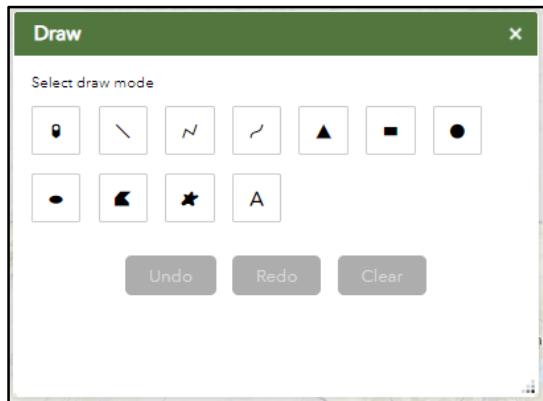
The process for searching for Visit information is essentially equivalent to that of the Find Opportunity Search, with one exception. Visit information is information gathered from a past field visit. If you constrain your site visit search by date, make sure that your date range does not extend into the future.

## The Draw Tool

The Draw Tool is available as a widget on the map. It allows you to visually modify the map with points, lines, shapes, and text.

In the upper left-hand corner of the map, the last widget on the right is the draw tool. Click on this widget.

A pop-up box will appear prompting you to select a 'draw mode'. There are 11 different modes you can select, but all 11 can be divided into four basic categories: point, lines, polygons, and text.



## ■ Creating Points on the Map

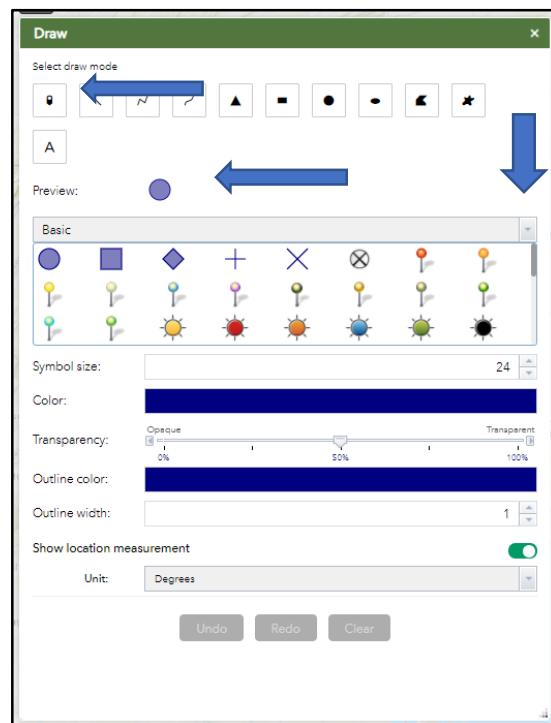
There is only one mode that will allow you to place points on the map. It is the far-left button. Select this.

The 'Preview' label will display the default point symbol. If you would like to change this symbol, scroll through the box of symbols, and click on the one you desire. ALSO, note the drop-down menu available for point classes. By default, the 'Basic' class will show, but there are 20 classes of point styles to choose from including: A-Z, Arrows, Points of Interest, Public Safety, and Transportation.

Next select the symbol size, color, transparency, outline color, and outline width. These must be selected before placing your point on the map. They cannot be changed retroactively.

Click on the location on the map where you would like to place your point. By default, the latitude and longitude coordinates will appear. This feature can be turned off.

If you misplace your point, you cannot move or edit the point on the map. You will need to click the Undo button. This will erase the point on the map. As a rule, the Undo button can be pressed repeatedly to slowly undo a series of actions. The Clear button will erase everything **that has been drawn on the map during your work session all at once. This is a critical difference.**



Undo

Redo

Clear

## ■ Drawing Lines on the Map

There are three line modes you can select: line, polyline, and freehand polyline.

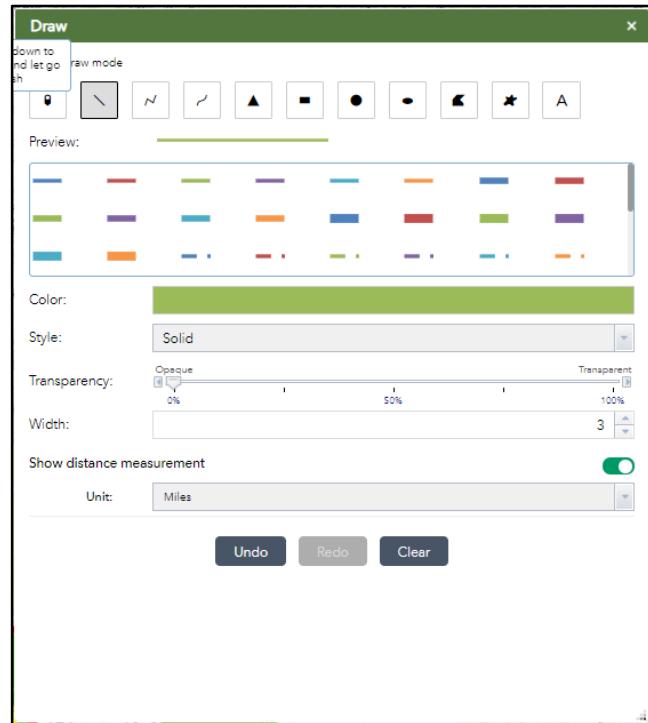
The line tool allows you to draw a straight, single segment line on the map.

The polyline tool allows you to draw a multi-segment line with straight segments on the map.

The freehand polyline allows for the creation of a curved, twisting line that can cross itself without closing into a polygon.

The ‘Preview’ label will display the default line symbology. If you would like to change this symbol, scroll through the box of symbols, and click on the one you desire.

Next select the color, style, transparency, and width. These must be selected before placing your line on the map. They cannot be changed retroactively.



Click on the beginning location on the map where you would like to start the line. Instructions will appear in small text guiding you the process for how define the end point. By default, the length of the line will appear in miles. The units can be changed, or this feature can be turned off. But again, it must be done before the line is drawn.

If you misdraw your line, you cannot move or edit the line on the map. You will need to click the ‘Undo’ button. This will erase the line on the map. The ‘Clear’ button will erase everything that has been drawn on the map.

## ■ Drawing Polygons on the Map

There are six polygon modes you can select: triangle, extent, circle, ellipse, polygon, and freehand polygon.

The triangle, extent, circle, ellipse modes allow you to draw defined shapes with different sizes.

The polygon mode allows you to draw a multi-segment polygon with straight segments on the map.

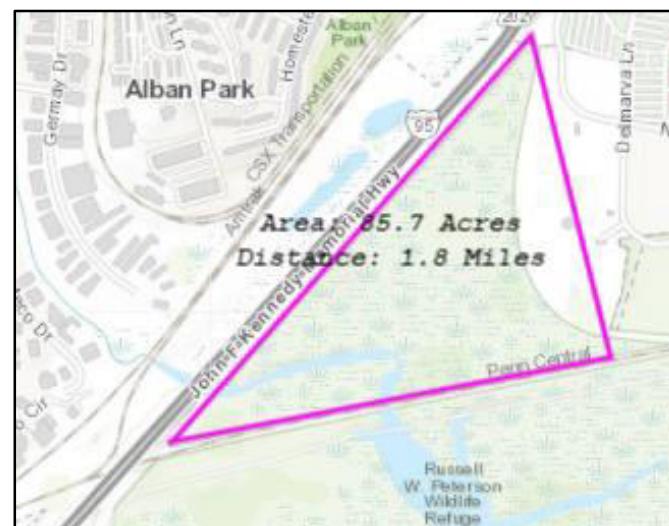
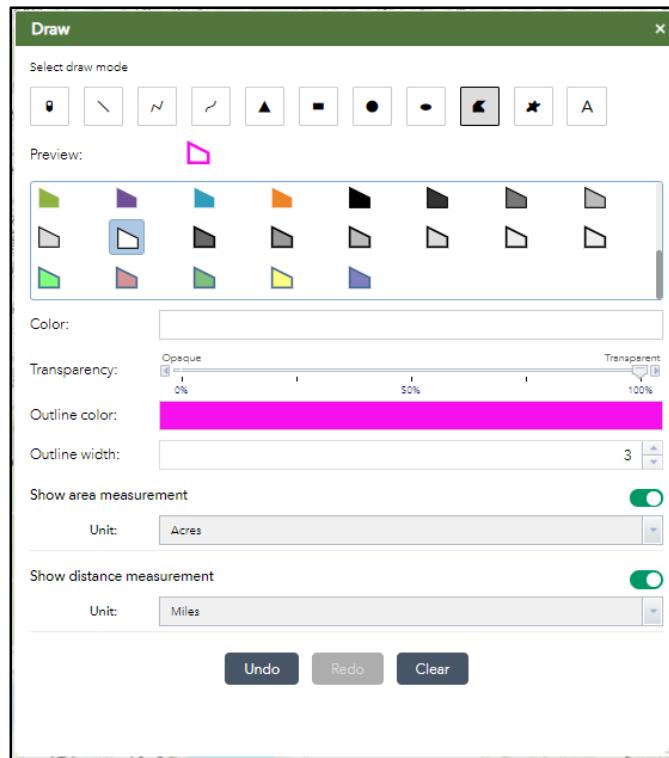
The freehand polygon allows for the creation of a curved, twisting polygon.

The 'Preview' label will display the default polygon symbology. If you would like to change this symbol, scroll through the box of symbols, and click on the one you desire.

Next select the color, style, transparency, outline color and outline width. These must be selected before placing your polygon on the map. They cannot be changed retroactively.

Click on the beginning location on the map where you would like to start the polygon. Instructions will appear in small text guiding you the process for how define the end point. By default, the area and the distance of the polygon will appear on the map. The units can be changed, or this feature can be turned off, but the location of where these measurements appear on the map cannot be changed. All of this must be done before the polygon is drawn.

If you misdraw your polygon (or a segment of the polygon), you cannot move or edit the line on the map. You will need to click the 'Undo' button. This will erase the polygon on the map. The 'Clear' button will erase everything that has been drawn on the map since the beginning of your work session.



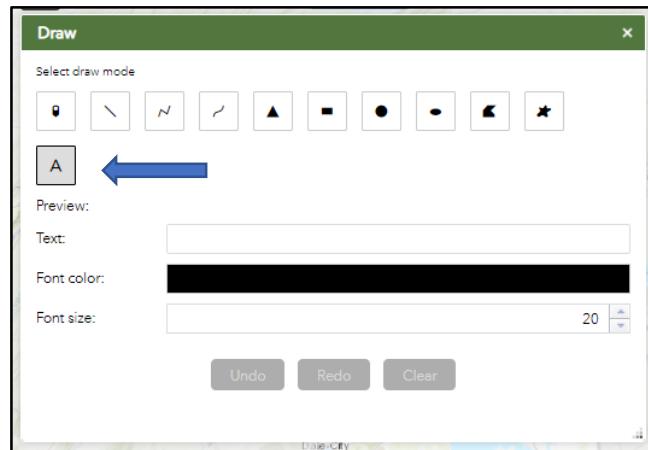
## ■ Adding Text to the Map

There is only one mode that will allow you to add text to the map.

Type your desired text into the empty text box.

Next select the font color and font size. These must be selected before placing your text on the map. They cannot be changed retroactively.

Click on the location on the map where you would like to place your text.



If you misplace your text, you cannot move or edit it on the map. You will need to click the 'Undo' button. This will erase the text on the map. The 'Clear' button will erase everything that has been drawn on the map.

## Location Details

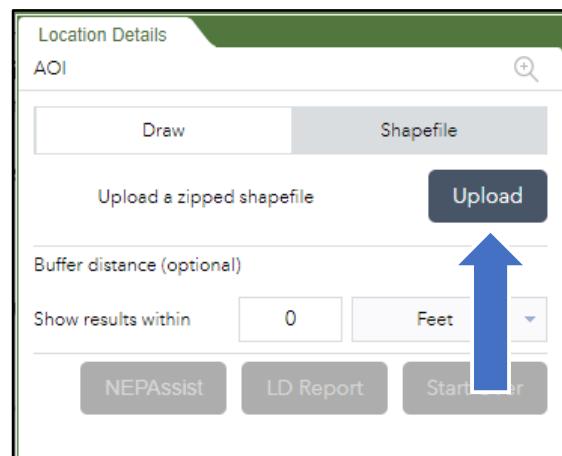
The location details tool allows you to quickly and easily generate a series of reports that summarize information about an Area of Interest (AOI) from multiple data layers at once. It allows you to create a polygon around a project area and then view a summary report for that polygon that includes: the acreage and types of wetlands on the property, the linear miles of streams through the site, and a summary of the wetland restoration opportunities on or near the project site, etc.

When you open the Location Details tool, you will first be prompted to select an AOI (Area of Interest). There are two tabs to choose from: Draw and Shapefile.

## ■ Select Area of Interest by Uploading a Shapefile

The 'Shapefile' tab will prompt you to upload a zipped shapefile from your computer.

*Important Note: There is a difference between uploading a Shapefile in the Add Data tab and the Location Details Tab. If you upload a shapefile in the Add Data tab, a data layer will appear in the 'Added Data Layers' Tab of the WRR Layer List and allow you*



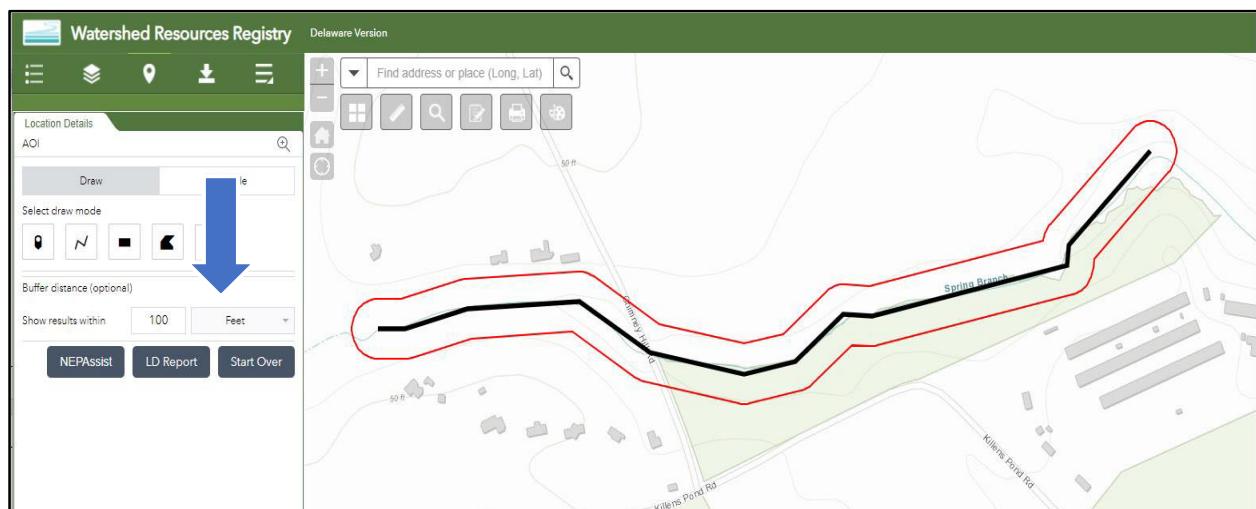
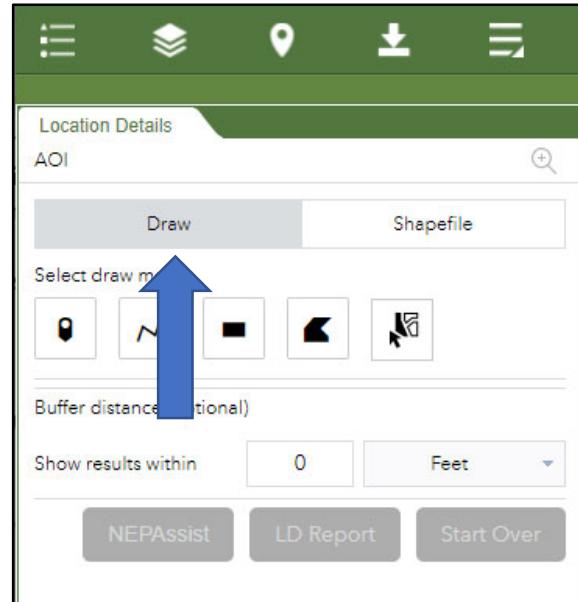
*to turn manipulate that data like any other layer. If you upload a Shapefile in the Location Details tab, you do not get a data layer pertaining to that data.*

- Select Area of Interest by Drawing

The ‘Draw’ tab will prompt you to select a draw mode: point, line, extent, polygon, and select by rectangle. Regardless of what mode you select, instructions for how to use the tool will appear near the cursor once you begin drawing on the map.

If you make a mistake or would like to redraw your AOI, click the Start Over button.

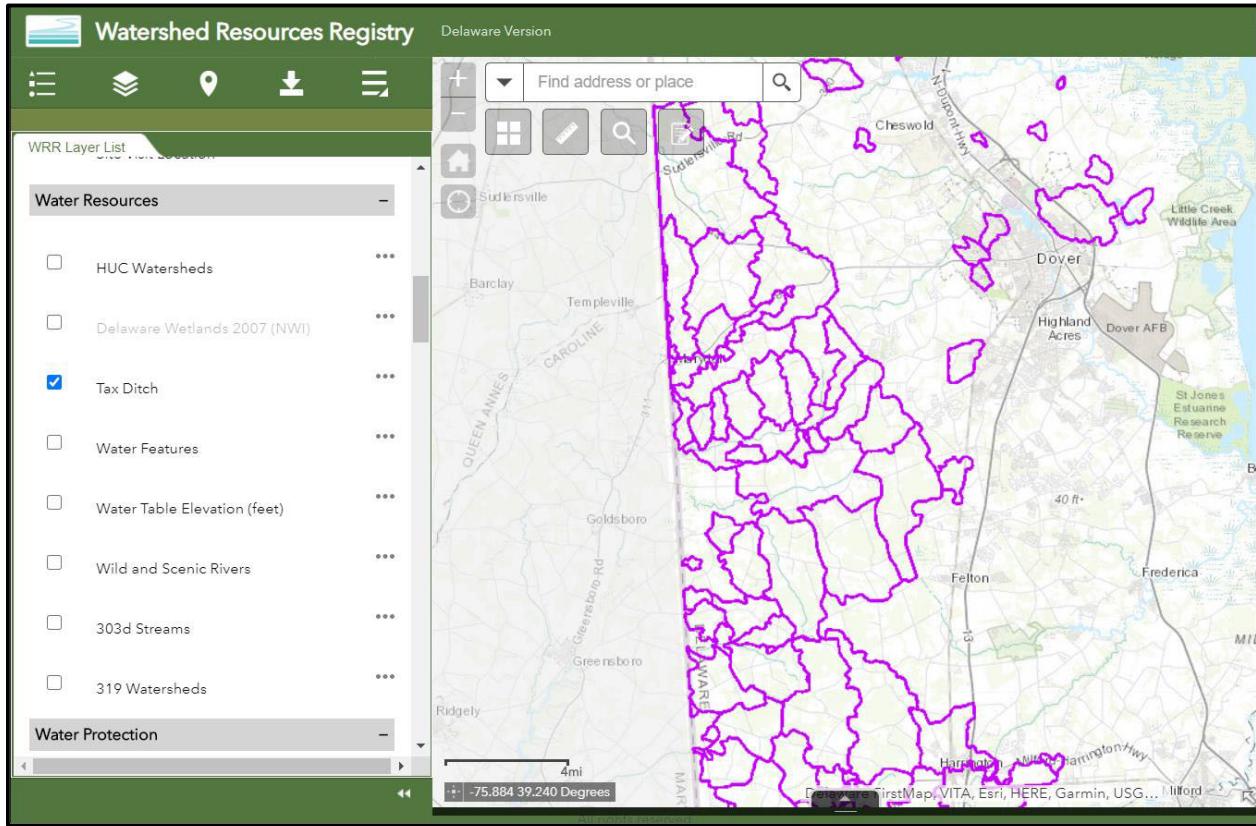
Once you have drawn your desired AOI on the map, it is possible to implement a buffer around the AOI. Input the desired buffer size into the text box and select the appropriate units from the drop-down menu.



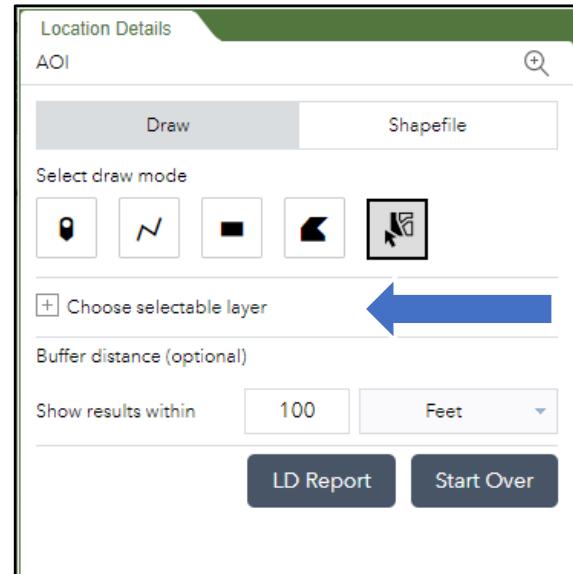
- Select by Rectangle and Selectable Layers

The ‘Select by Rectangle’ is a powerful drawing tool that will allow you to select a mapped polygon from a data layer and use it as your AOI. The following example illustrates how you could select a tax ditch as your AOI.

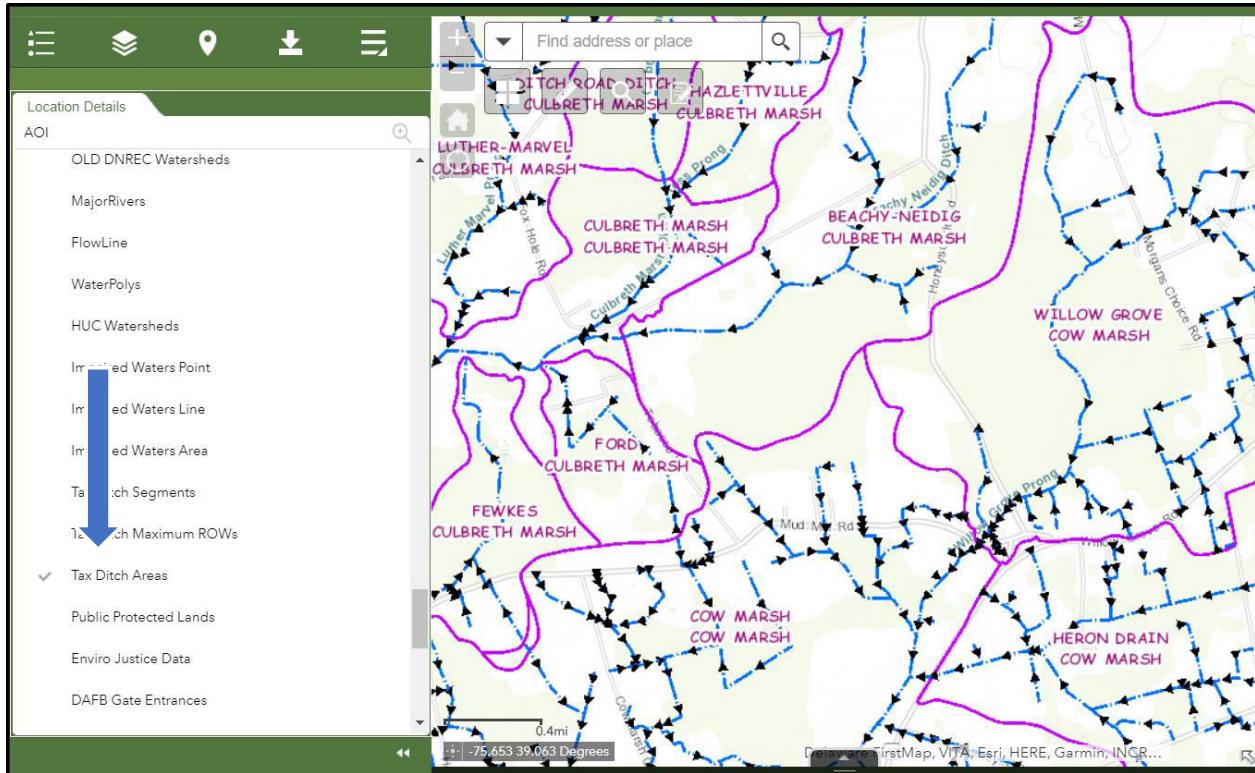
You must first turn on the relevant data layer in the WRR Layer List. In the image below, you can see the 'Tax Ditch' layer has been turned on.



Next, navigate to the 'Location Details' tool. Select the Draw button and under 'Select Draw Mode', select the 'Select by Rectangle' button. Click the 'plus' sign to the left of the 'Choose selectable layer' option.

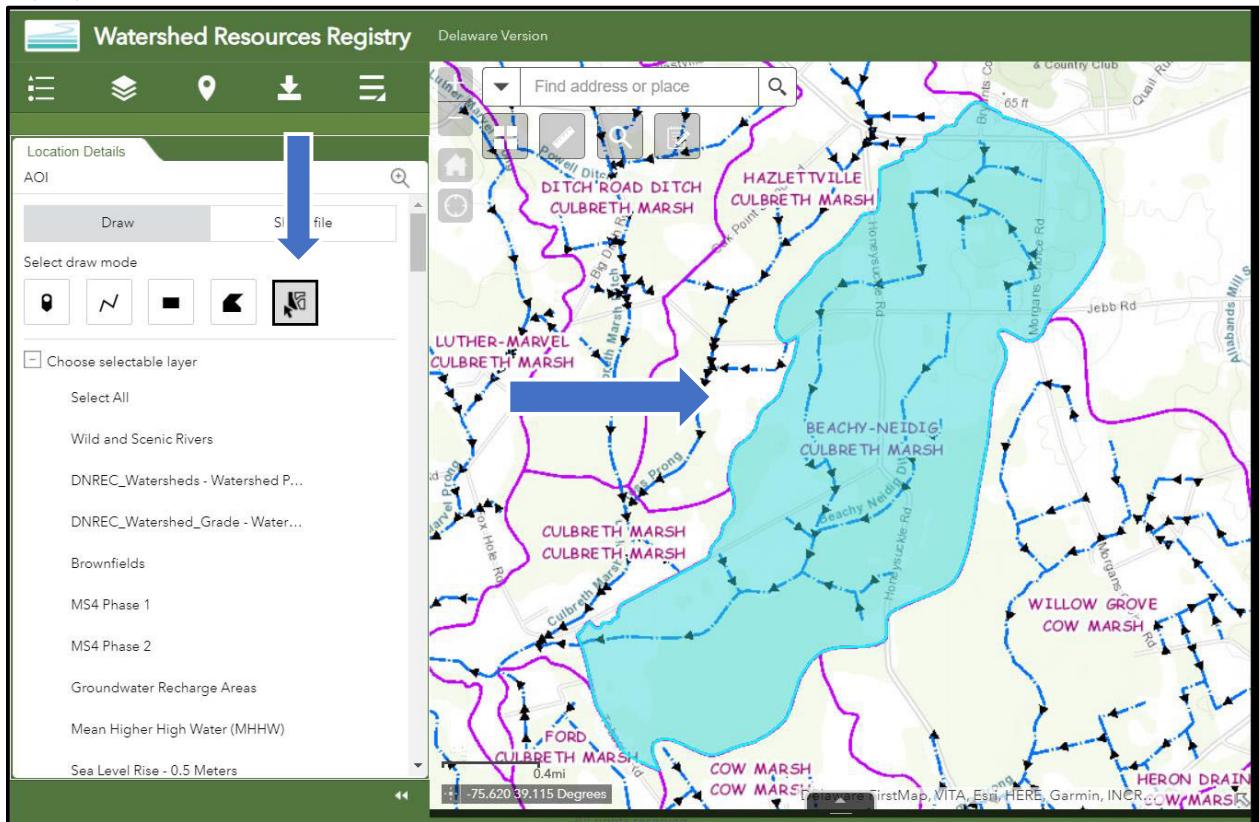


Now, select the corresponding layer in the drop-down menu.



Navigate back up to the top of the panel. Minimize the 'Choose selectable layer' list and click on the 'Select by Rectangle' drawing tool. Draw a rectangle within the polygons that you would like to select on the map. Once you draw the rectangle, any polygons that intersect the rectangle you drew will be

highlighted on the map.



In the image above, you can see that a tax ditch polygon has been selected and is highlighted in blue.

You can now run a Location Details Report (LD Report) on the entirety of the polygon(s) selected.

The Select by Rectangle tool will not allow you to run the NEPA Report. To run the NEPA Report for your desired AOI, roughly trace the outline of a polygon you're interested in.

## ■ Location Details Report

The LD Report will open within the tool bar.

LD Report Fields within the report can be expanded (using the plus sign) to reveal more information about the site in question.

All state LD reports include the spatial analyses foundational to the WRR, but every state also contains additional fields the state WRR TAC found relevant. Thus, every LD report will vary slightly by state.

This screenshot shows the 'Location Details' report interface. At the top, it displays 'Area : 10.25 acres'. Below this, there's a section titled 'Show areas in Metric Units' with download and search icons. The main content area lists several categories with counts and gear icons:

- Wetland Restoration (0)
- Wetland Preservation (1)
- Upland Restoration (2)
- Upland Preservation (2)
- Riparian Restoration (4)
- Riparian Preservation (2)
- Stormwater Compromised Infrastructure Res... (0)
- Stormwater Natural Infrastructure Preservation (1)

## ■ Additional Location Detail Reports

Additional Location Detail Reports on additional topics can be developed on a state-by-state basis and added to a given state's WRR. To see if your state has additional reporting options embedded, click on the 'More' icon at the top of the green tool bar.

If additional Location Details reports exist, they will appear below the 'Print Map' icon. Once selected, the process for running a customized Location Details report is identical to running a LD Report. One additional Location Details Report that can be found in all WRRs is the Water Resources Report.

This screenshot shows the 'Other panels' menu. It includes options like 'Add Data', 'Tutorials', and 'Print Map'. A large blue arrow points to the 'PennDOT/USACE Location Details' option, which is highlighted in yellow. Other options listed are 'Stormwater Location Details' and 'Water Resources Report'.

## ■ Water Resources Report

The Water Resources Report is a customized Location Details report designed to provide summary of information on the watershed(s) and water resources within a user-defined area of interest. The Report's information comes from the attribute tables of mapped data layers present within a given WRR, and thus, presents the same information that can be accessed from the WRR Layer List. The Water Resources Report, however, aggregates all this information instantly and pulls it together in a printable or downloadable report that includes a map, legend, and scale.

To access the Water Resources Report navigate to the green tool bar and click on the 'More' icon. This is the far-right icon on the green toolbar.



A list of options will appear. Click on the 'Water Resources Report' at the bottom of the list.

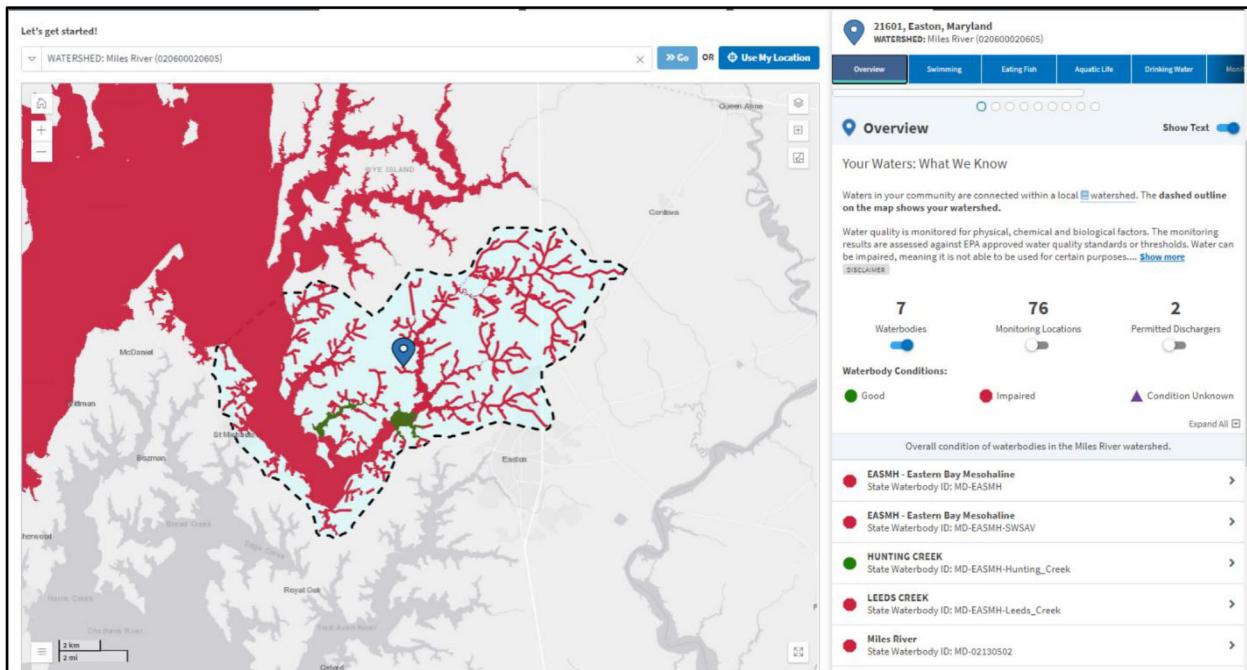
Draw or upload your area of interest and then click on the blue 'WRR Report' button to run the Water Resources Report. A new panel will open with a list of data layers surveyed. The results for

each data layer can be expanded (using the plus sign) to reveal more information about the site and the metric in question.

Always expand the 303d Streams – line data layer. This layer is included in every WRR Water Resources Report and will include a link to the EPA's How's My Waterway tool for every 303d listed waterway. Clicking any link will take you to How's My Waterway, and that specific waterway. ***It is important to expand the 303d Streams – Line layer within the tool panel, because the hyperlinks to How's My Waterway will not appear in the printable report.***

Currently, Maryland's is the only WRR that includes any other data layers with hyperlinks in the Water Resources Report. That is the Tidal Waters Use Classes.

Layer	REACHCODE	Length
8-digit HU	02080110033566	1.22 mi
12-digit HU	02080110033565	1.03 mi
USGS NHD - Flow Direction	02080110033578	1.02 mi
303d Streams - Line	02080110033579	0.73 mi
NWI - Wetlands		
Lakes (Detailed)		



## ■ Generating a Report

All the information that appears in the LD Report tab (or custom Location Details Reports), is available in a printable report, a downloadable pdf, or downloadable CSV file.

## ■ Printing A Report

In the upper right-hand corner of the LD Report, you will see a document icon. If you hover over it, it is entitled 'Create Report'. Click this icon.

A drop-down menu will appear. The default, Letter ANSI A Portrait is a standard 8.5" X 11" sheet of computer paper. Clicking the blue 'Print' button will bring up a preview of the document that you are printing. Click the gray 'Print' button again to print out a version of your LD Report.



Untitled - Google Chrome

about:blank

This report is designed to be printed on Letter ANSI A (8.5" X 11") Portrait Paper

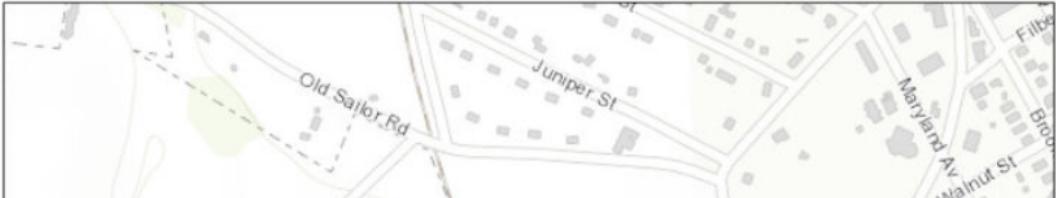
Print Close

 Screening Report

**Area of Interest (AOI) Information**

Area : 16.98 acres

Lat/Long: 38.5582, -75.5760



10/2/2020

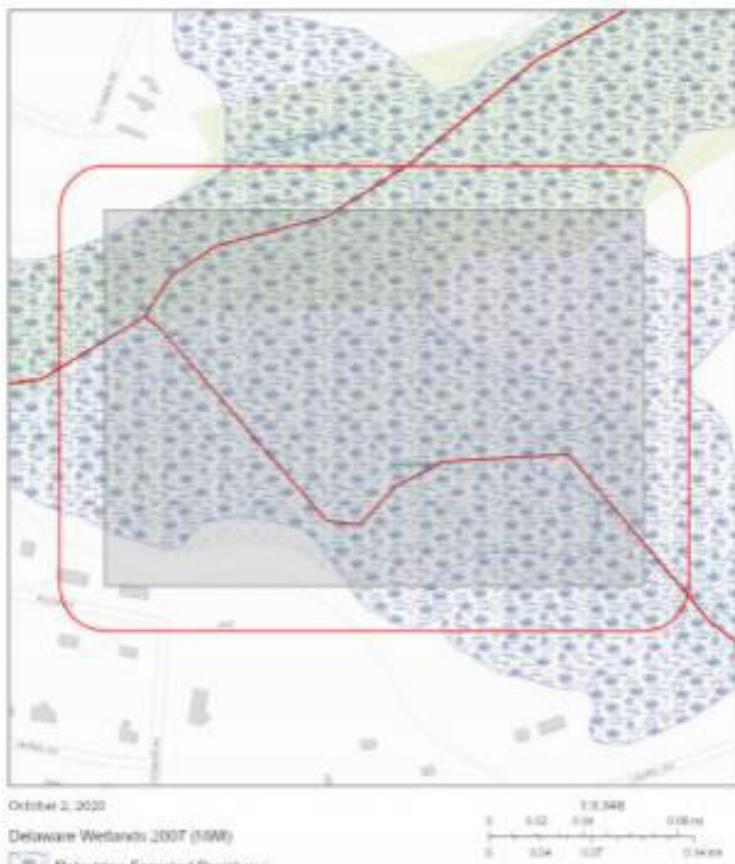


## Screening Report

### Area of Interest (AOI) Information

Area : 33.55 acres

LatLong: 38.5568, -75.5429



October 2, 2020

Delaware Wetlands 2007 (DWY)

Palustrine Forested Deciduous

Impaired Waters Area

Impaired Waters Line

Impaired Waters Point

0 0.02 0.04 0.06 mi  
0 0.04 0.07 0.14 mi

114

10/2/2020

### Summary

Name	Count	Clipped Area (acres)	Clipped Length (mi)
Wetland Restoration	0	0	N/A
Wetland Preservation	1	21.42	N/A
Upland Restoration	3	3.5	N/A
Upland Preservation	4	4.23	N/A
Riparian Restoration	8	7.34	N/A

## ■ Downloading a PDF

If you would like to save the LD Report as a PDF rather than printing out a word document, click on the 'Create Report' icon.

Click the blue 'Print' button to bring up the print preview. Click the grey 'Print' button. A Print Dialogue box will appear.

There is a drop-down menu labeled with 'Destination'. Click the drop-down menu and select 'Save as PDF'. Click the blue 'Save' button and save it to the desired location on your computer.



## ■ Downloading a CSV File

Next to the 'Create Report' button, there is a 'Download' button. A dialogue box will open prompting you to select a CSV file and then download. The attribute table for each individual layer in the LD Report will download as a separate CSV file that can be opened in Excel. (i.e. Wetland Preservation will download separately from Wetland Restoration, etc.).



## ■ NEPAssist Tool

NEPAssist is a tool created by EPA that facilitates the environmental review process and project planning in relation to environmental considerations. The web-based application draws environmental data dynamically from EPA GIS databases and web services and provides immediate screening of environmental assessment indicators for a user-defined AOI. A suite of tools and features connected to NEPAssist can be accessed independently at <https://www.epa.gov/nepa/nepassist>.

Selected functions from the NEPAssist tool have been directly incorporated into the WRR interactive maps. This means that you can draw a polygon or other area of interest inside the WRR and then run both the NEPAssist tool and the Location Details report on that same polygon.

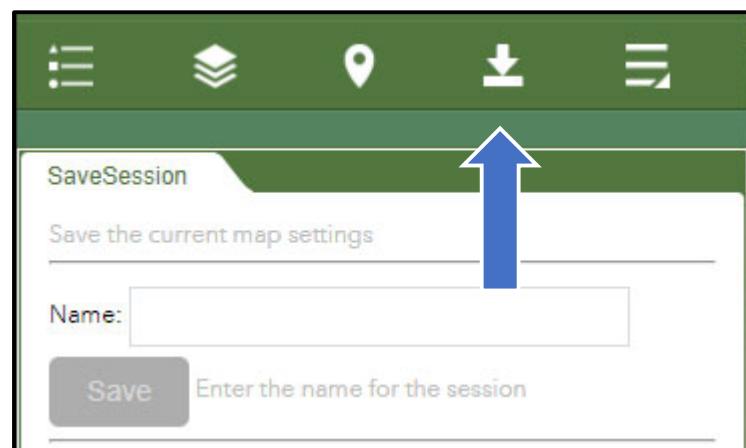
Clicking on the NEPA Assist button (after creating an AOI) will open a new window with National, State, Demographic, and USFWS IPaC Reports. The USFWS IPaC report contains information on USFWS managed resources like endangered species, migratory birds, facilities, and wetlands. All of these reports can be downloaded as an Excel spreadsheet or PDF.

This tool will work on AOI 500 sq. miles (320,000 acres) or less.

*Note: The NEPAssist tool does not work if you have created your AOI by uploading a shapefile or by drawing with the 'Select by Rectangle' tool. It will work only by drawing a point, polyline, rectangle or polygon.*

## Save Sessions

The Save Sessions tool creates a dynamic bookmark within the WRR that will save the current map extent, the data layers turned on, and any modifications you've made to the map (i.e., placemarkers, polygons, text, etc). At any point as you navigate through the WRR, you can click on the 'Save Sessions' button at the top of the panel (see right) and save your current map view.



*Helpful Scenarios for Save Sessions: The Save Sessions option can be a great time-saver. If you are working on a project with a colleague, you can save multiple bookmarks of an area with different data layers visible and different map modifications. By saving a session, you can email all these bookmarks, via one file, to your colleague so they can see exactly what you see.*

Once in the ‘Save Sessions’ panel, you should enter a name (e.g., ButlerCounty\_PermitReview) in the text bar and click the ‘Save Session’ button. This will save the map exactly as it is occurring. If you have made modifications to the map via the Draw Tool or have an AOI turned on via the Location Details Tool, all of these will also be embedded within the bookmark.

If you hover your cursor over a given saved session, different icons will appear that allow you to

- ‘Load Map’ – this will navigate the map to your bookmarked map extent
- ‘Edit’ – this allows you to edit the name of your bookmark
- ‘Move up’ and ‘Move down’ – this will allow you to rearrange the order of your bookmarks as they appear on the panel
- ‘Delete’ – this deletes your bookmark

## ■ Create a Save Session File

At the bottom of the ‘Save Sessions’ panel you will see two blue links that allow you to ‘Load from file’ and ‘Save to file’. Saving to file will allow you to save a file to your desktop. Loading a file will allow you to upload a previously saved file from your computer. Saving or loading a file will save/load ALL the bookmarks you have created within a session. If you have created four bookmarks, you will only need to ‘Save to file’ one time.

## ■ Load a Save Session File

When you ‘Load a file’ from a previous session, modifications added to the map in your previous session will now appear on the map and you can continue to work with them.

It is also possible to email the file you have saved to a colleague. To do so, save the file to your computer. Then launch your email application, create a new email, and attach the file you just saved to this email.

The WRR allows for up to eight different bookmarks to be saved at a time. Also, WRRs retain bookmarks from previous sessions until you delete them or clear your browsing history.

Session	Actions
Test1	
Test2	

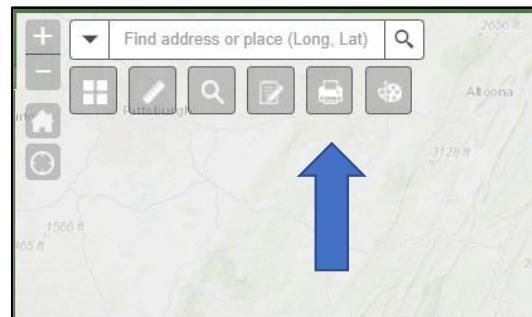
*If the WRR is glitching and struggling to save multiple bookmarks, try clearing your history or emptying your cache, and reloading.*

# The Print Map Tool

The Print Map Tool in the WRR is available as a widget on the map. It allows you to print the map as it appears on your screen, including visible data layers and added symbology.

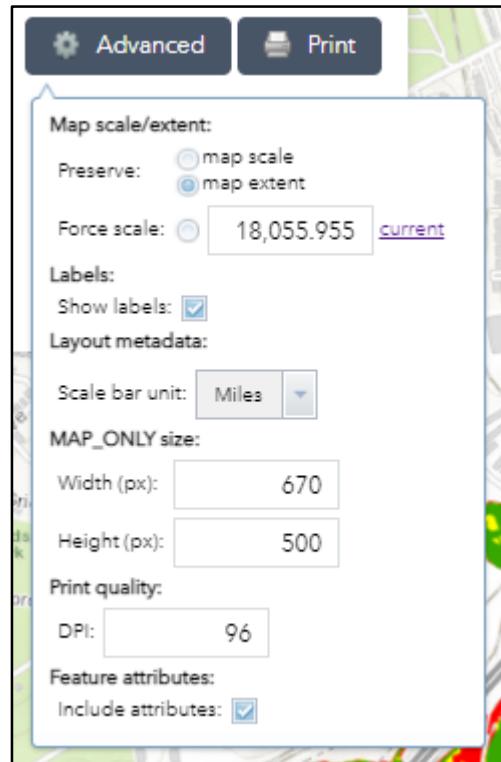
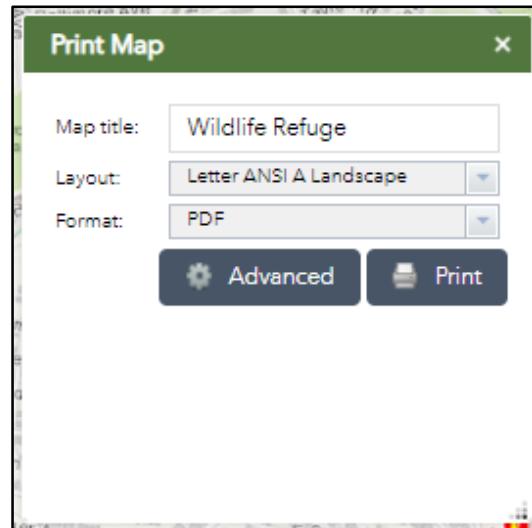
In the upper left-hand corner of the map, the second to last widget on the right is the Print Map tool. Click on this widget.

A pop-up box will appear prompting you to select a layout and a format.



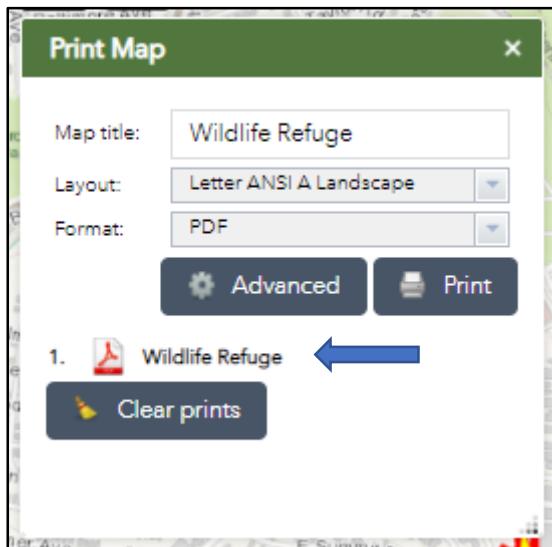
The default layout 'Letter ANSI A Landscape' will print the map on your screen including a title, scale, and legend. A text box will appear for a Map Title. Type in your desired title.

Click on the Advanced Button for additional modifications.



Once you have made your desired

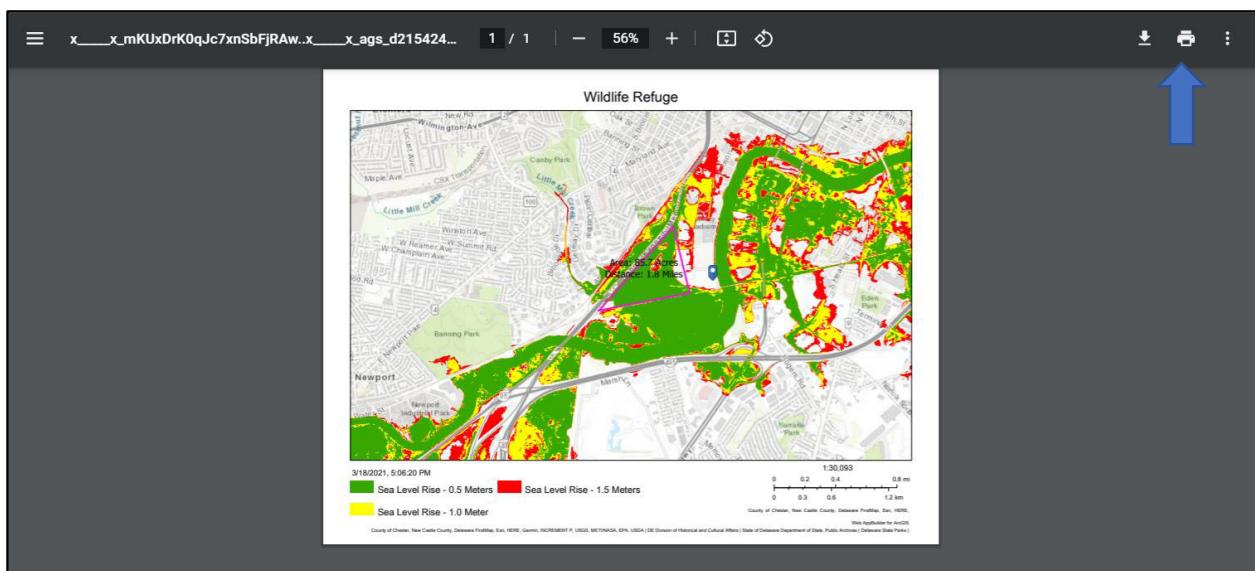
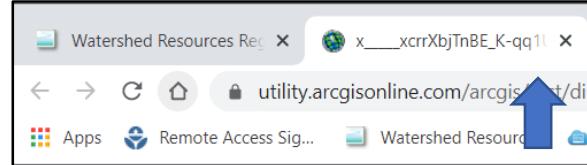
modifications to the Advanced panel, click on the Advanced button again to make the pop-up box disappear.



Click Print.

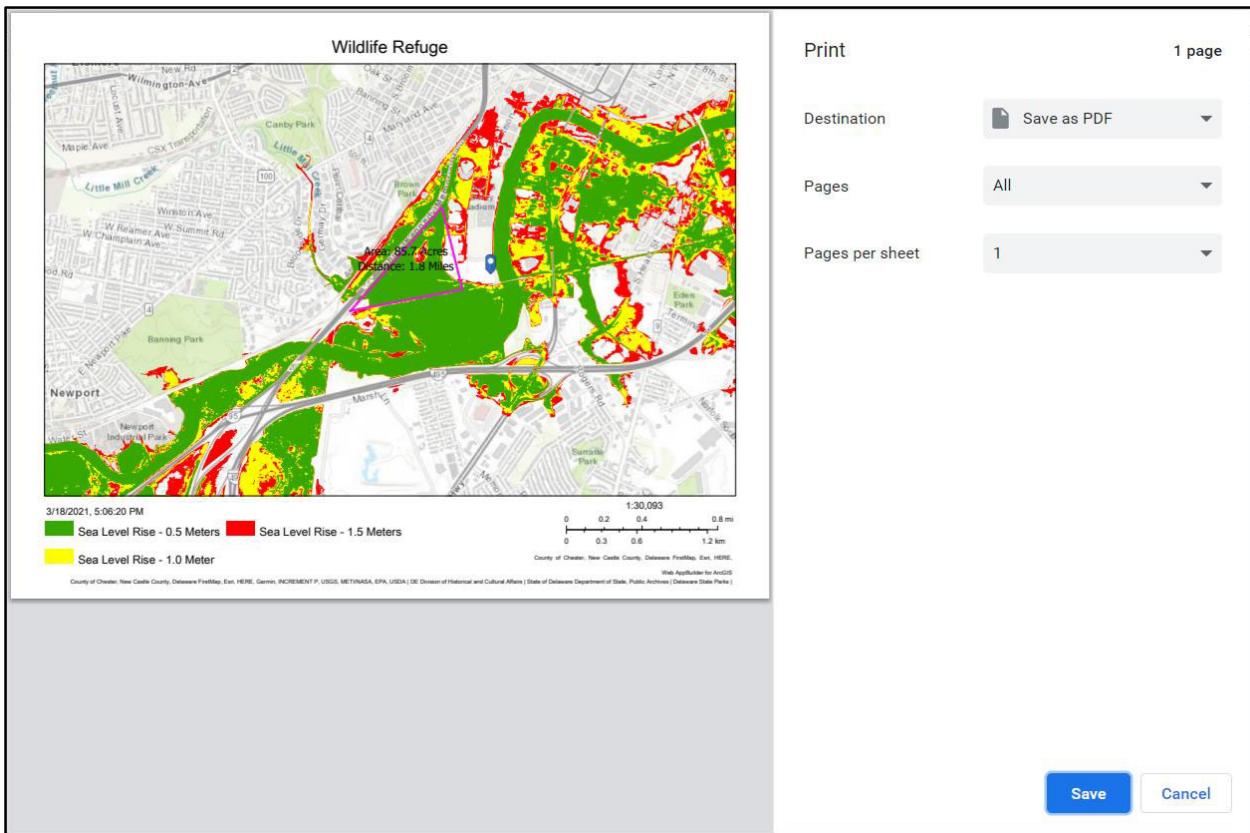
An pdf link appear with the title of your map. Click on this.

A new tab will open on your screen with your map.



In the new tab, there will be a printer icon in the upper right-hand corner. Click on this icon.

A pop-up box will appear.



Under the Destination field, select your desired printer or choose the option to 'Save as PDF' and save the document on your computer.