# Instructions for Drawing a Polygon on the Rhode Island Department of Environmental Management Approved Aquaculture Areas Map:

General map viewing and exploration

1. To open the web map displaying existing aquaculture sites, go to the following link by either clicking on the link below or copying and pasting the text into your web browser search window.
   http://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id=8beb98d758f14265a84d69758d96742f

2. Left click and hold down on your mouse to drag the image around and explore different areas of the map. Active aquaculture sites are shown in orange outlines with an orange "X" at each corner of the site.

3. To zoom in on the map, center the location you would like to zoom in on and then click on the gray plus/minus in the top left of the map to zoom in or out (see the red arrow in the image below). You can also zoom in using your mouse by placing your cursor over the area you want to zoom in on and rolling the mouse's scroll wheel forward (away from you). Zoom out by rolling the scroll wheel the other direction.
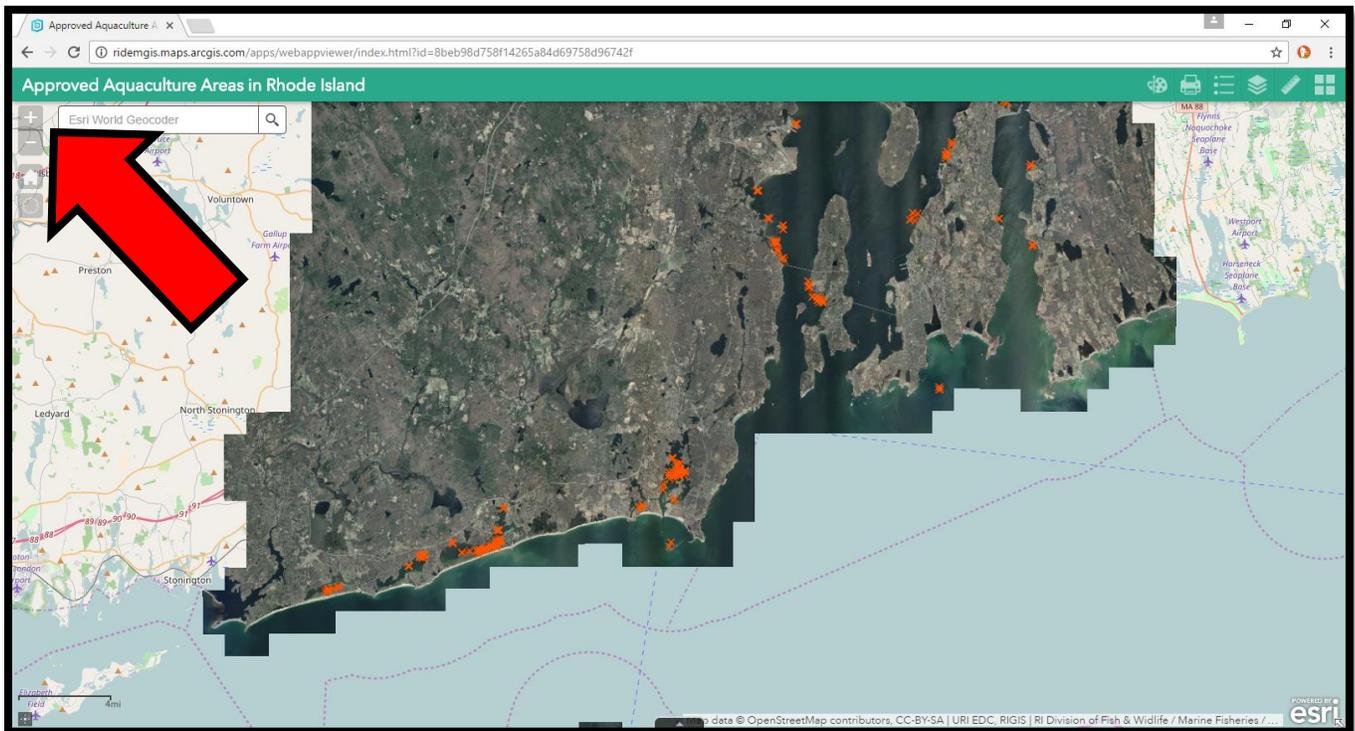
4. If you zoom in far enough, the latitude and longitude coordinates for vertices of existing aquaculture sites will show up as yellow text. See the example below for active aquaculture sites off Rome Point in North Kingstown.
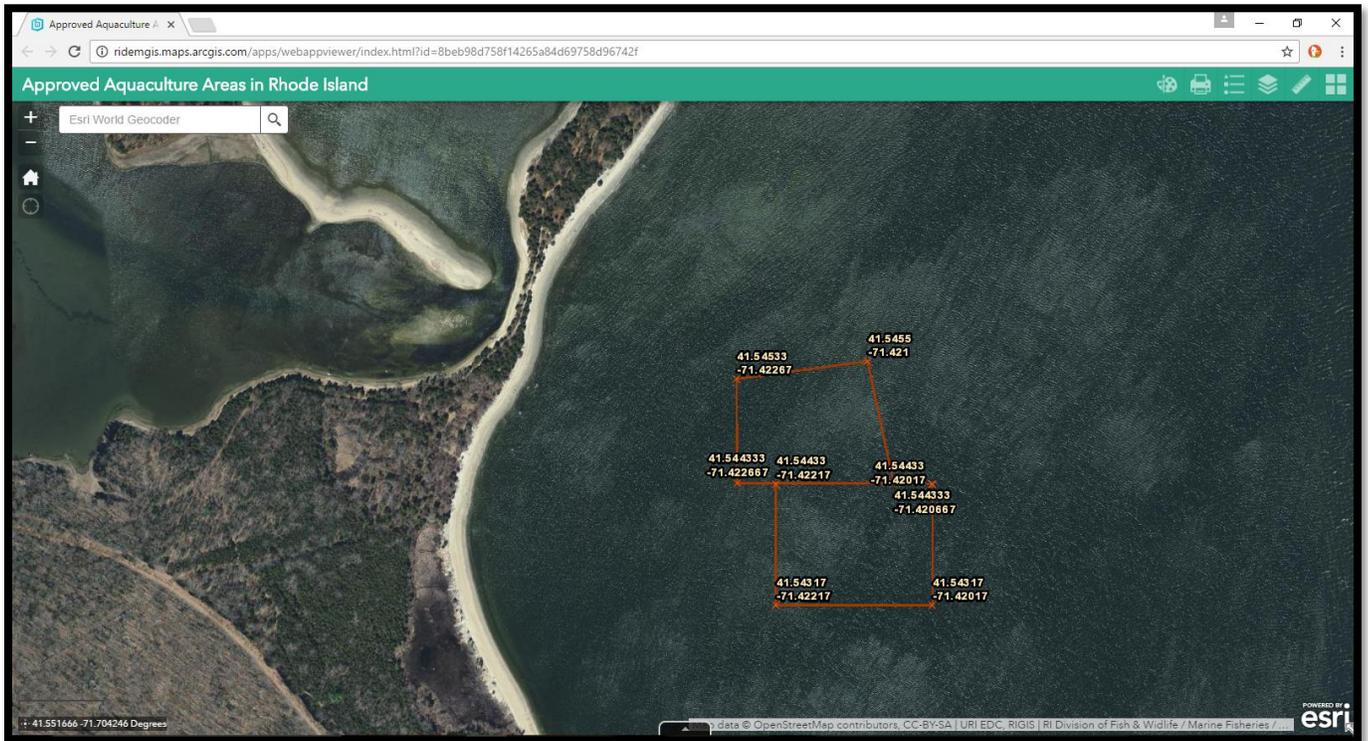

5. You can add or remove layers in the map by selecting the Layer List toolbar by left-clicking on the layers logo:
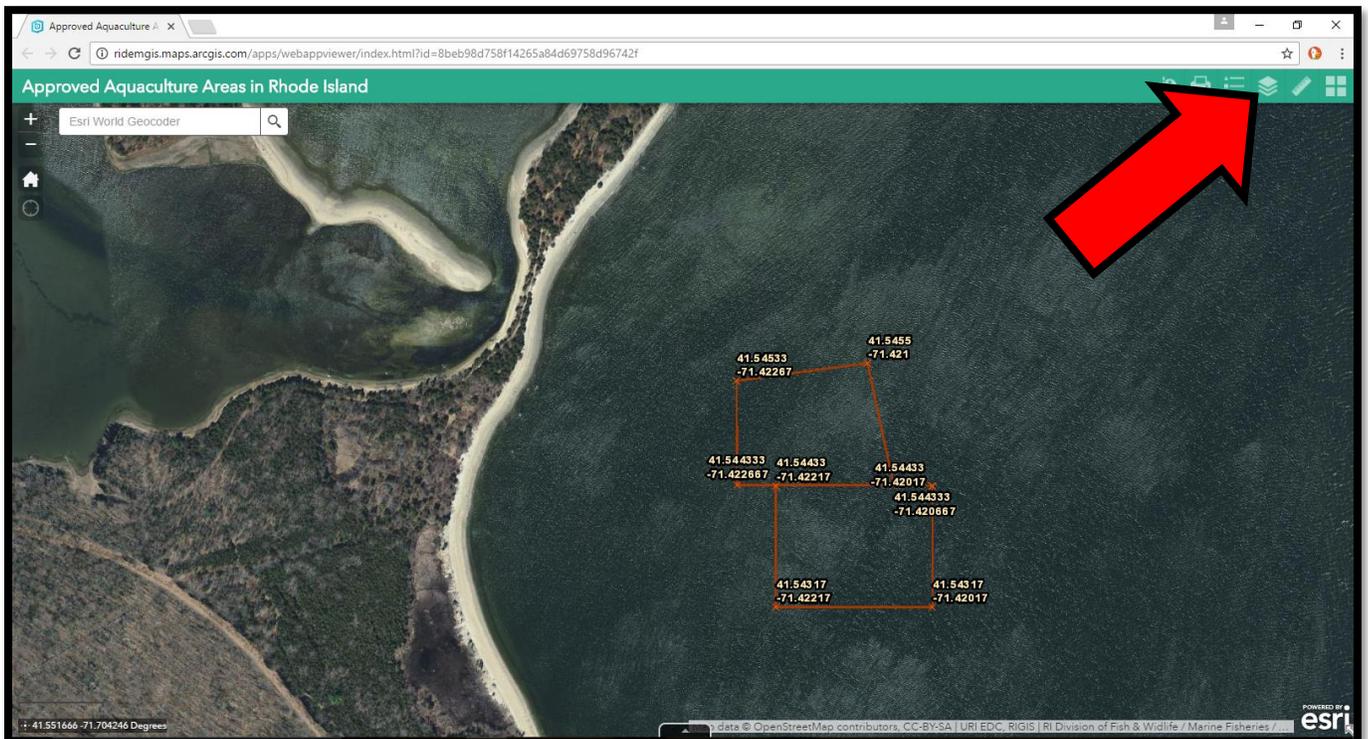
6. The following options will open up as a toolbar on the right side of the page.
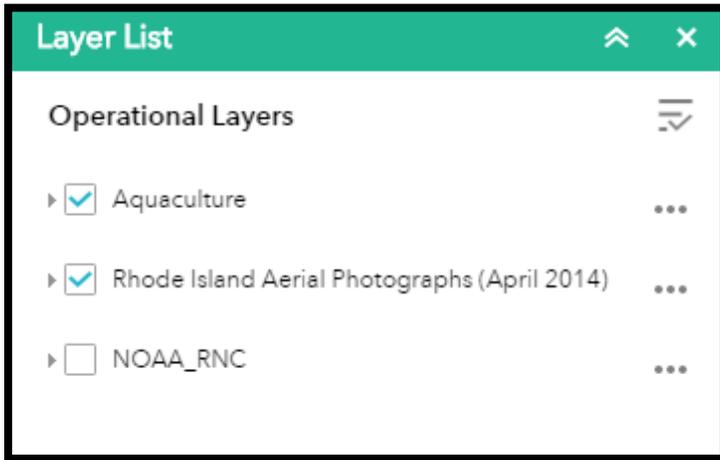
7. The Layer List includes a few options. To add or remove layers from the map, simply left-click on the box to the left of the layer's name to check or uncheck that layer. The map should update after you click.

8. To add NOAA Navigational Charts, check off the box to the left of the "NOAA_RNC" layer. You may need to uncheck the box to the left of "Rhode Island Aerial Photographs (April 2014)," because this layer is displayed on top of the nautical charts.
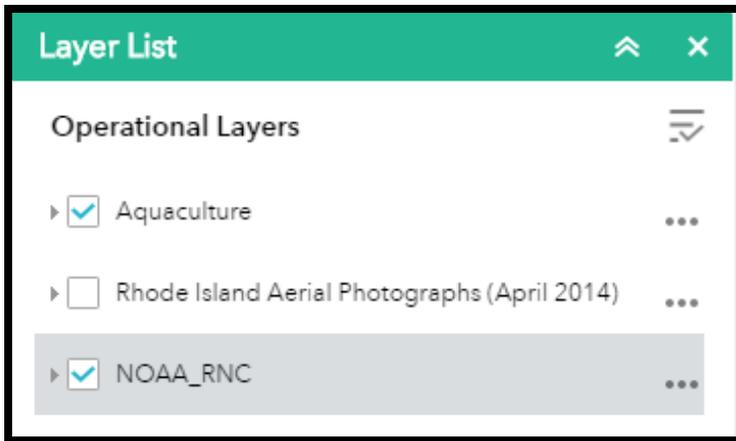
9. As you zoom in and out on the map, the nautical charts will update to the best nautical chart for the zoom level you have the map set at. The map may take a moment to load each time you adjust the zoom level or move to a new area.

For example, this is the Rome Point area at high resolution (zoomed in).
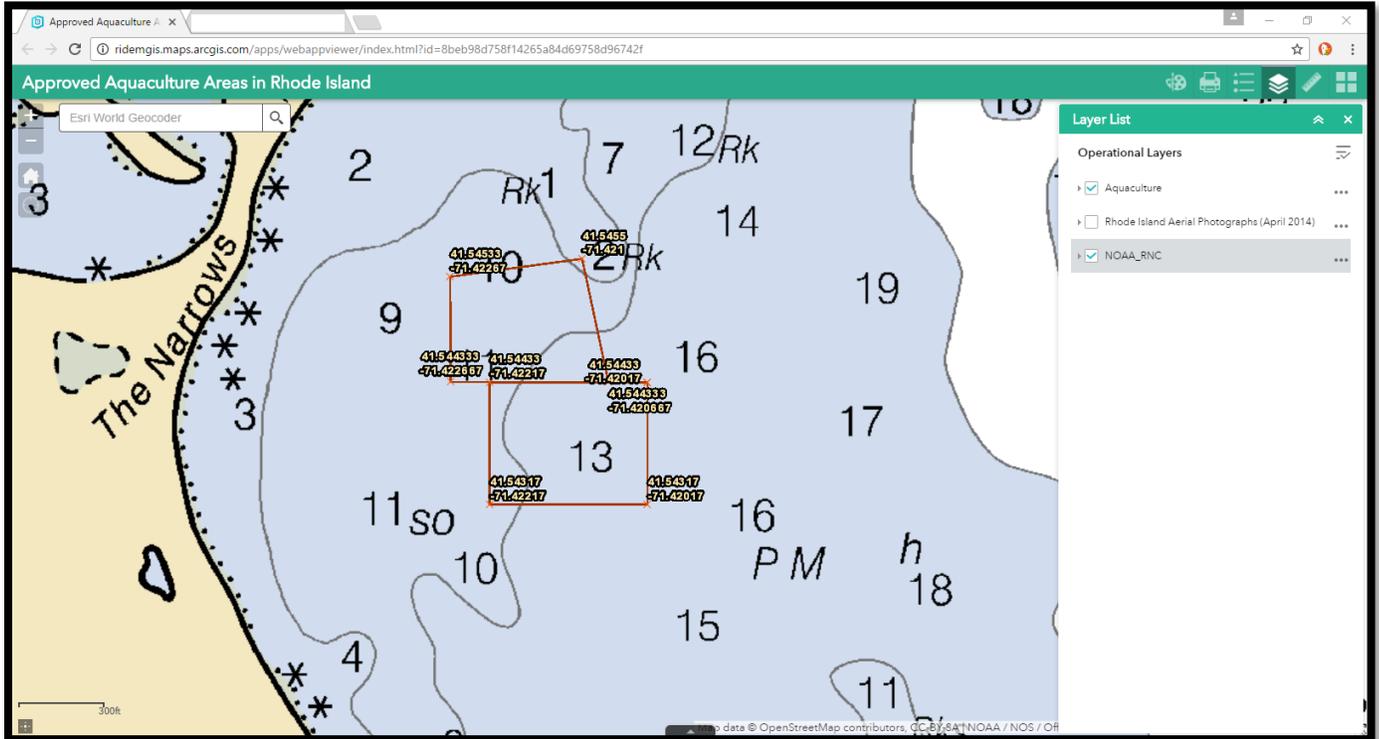
When we zoom out, the NOAA Nautical Chart switches to a chart covering a larger area and showing less detail.
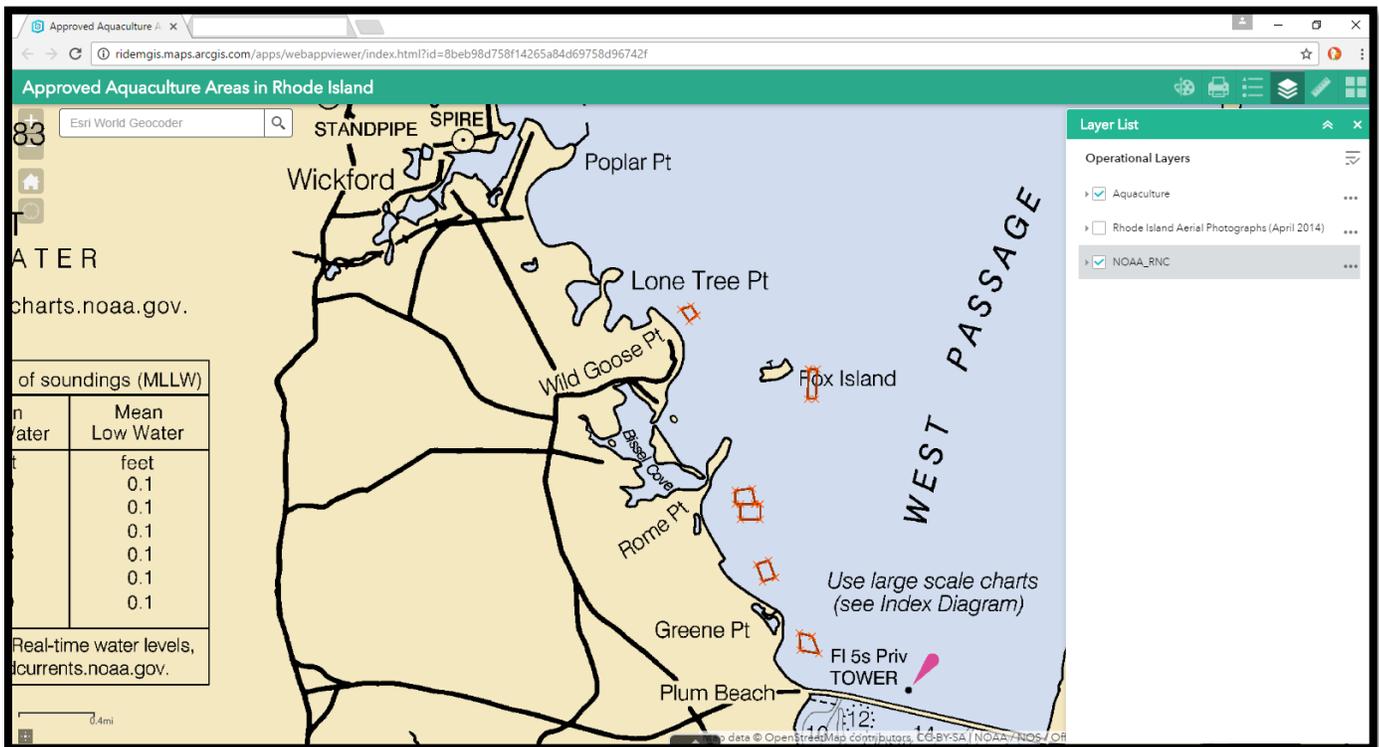
Drawing an aquaculture area on the map

10. To draw a shape on the map (if you are considering applying for an aquaculture site), zoom to the area you are interested in and then open the drawing tool in the top right corner of the web page (indicated by the red arrow in the image below). The drawing tool logo is a painter's pallet:
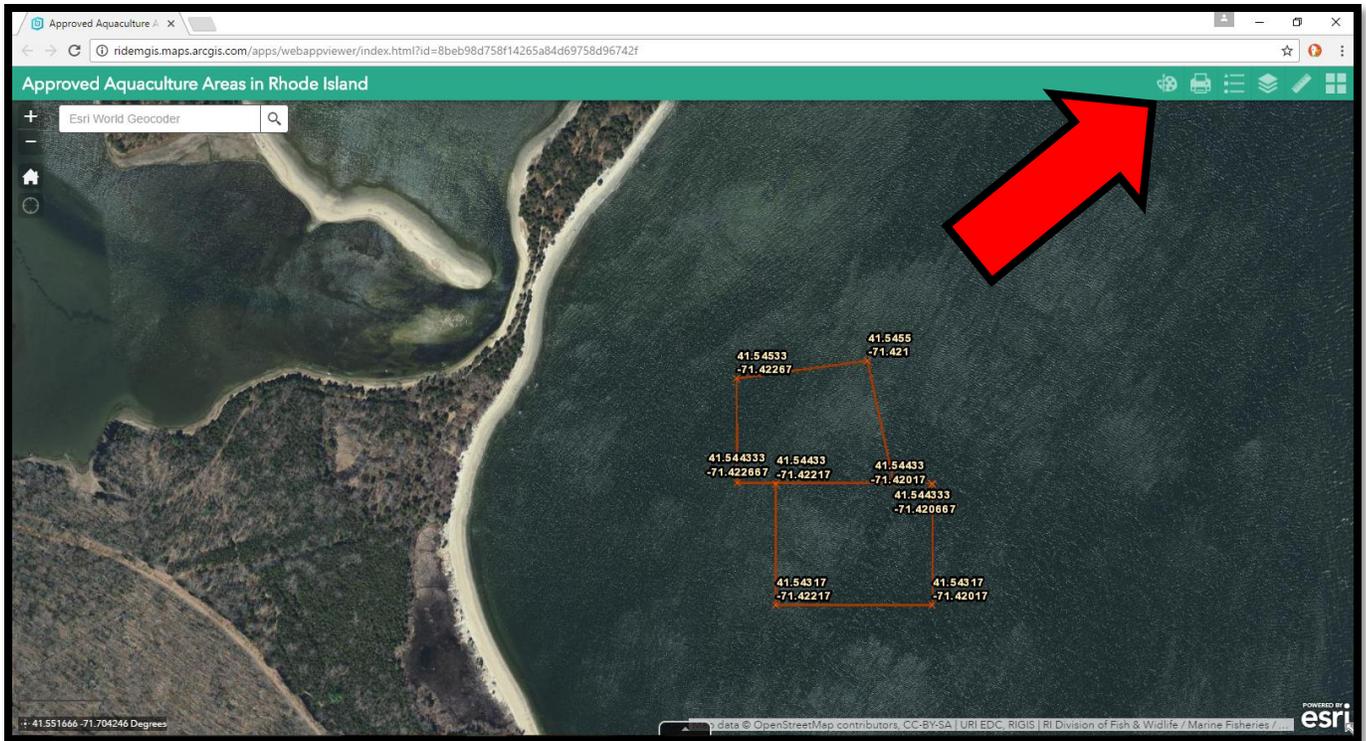

If you hover your cursor over the painter's pallet logo, the word draw will appear. Left-click on the draw tool to open it up.

11. The following toolbar should open up on the right side of the webpage.
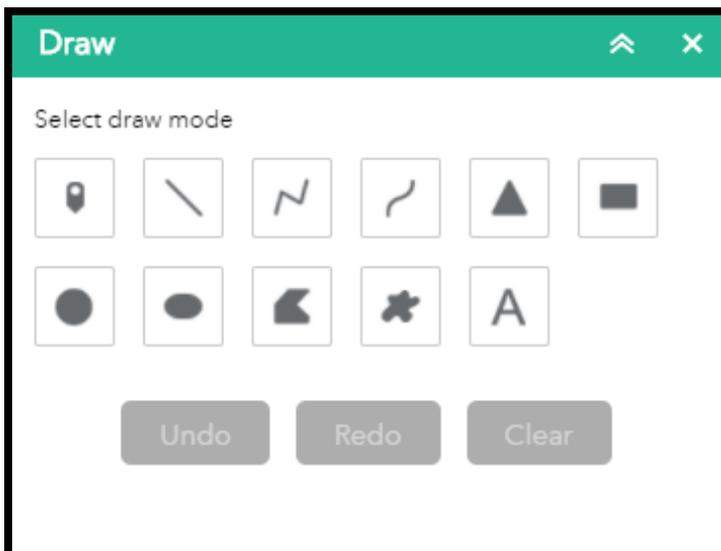
12. Click on the polygon draw mode (circled in red below).
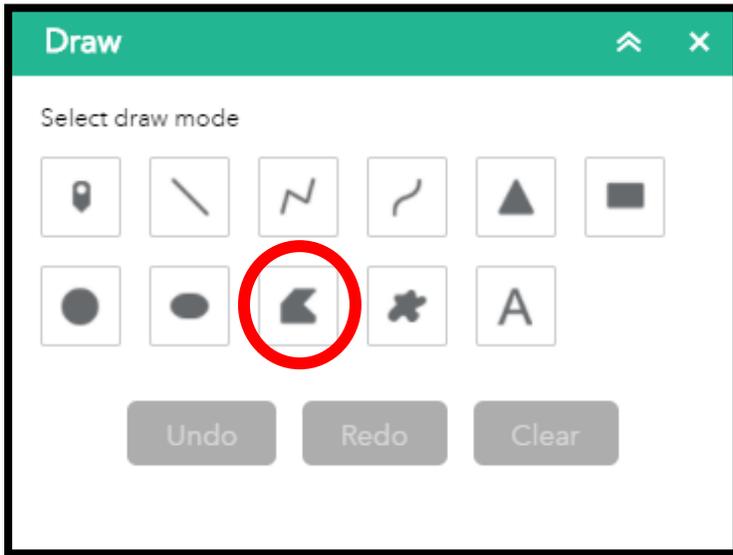
13. More tools should show up below after you click on polygon draw mode.
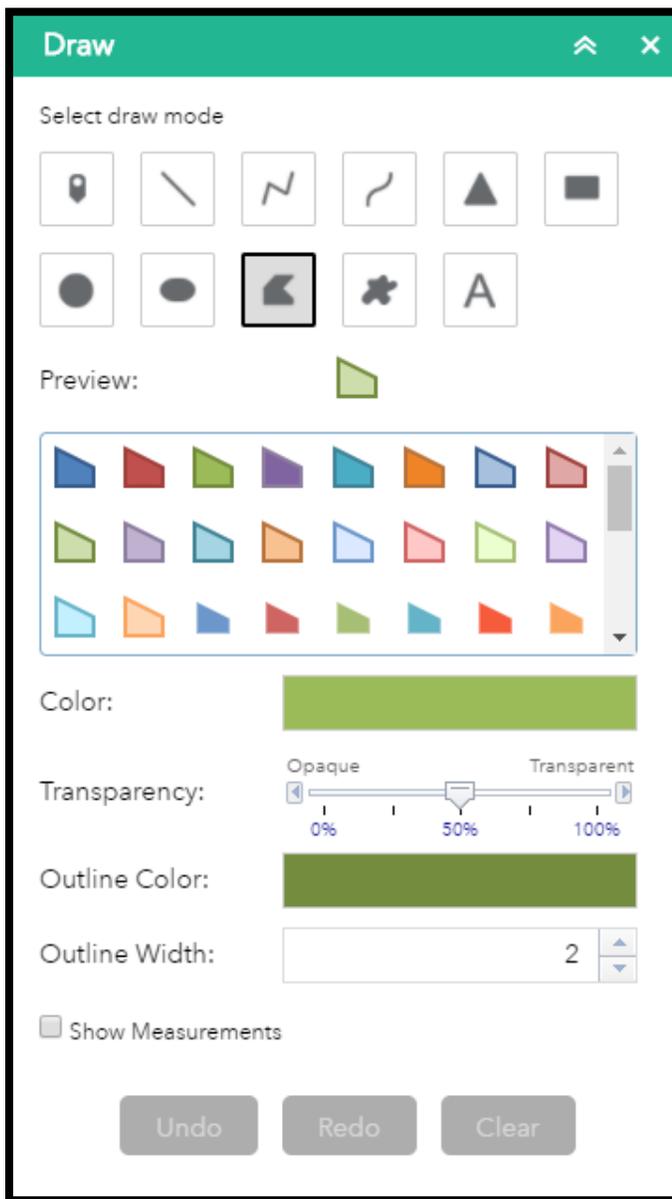
14. You can select any fill color, outline color, transparency level, or outline width you like by clicking on the the items to the right of each option in the toolbar and then making further selections in the dialog box that opens up. You can also select a preset option by clicking on one of the options (shown in the image below).
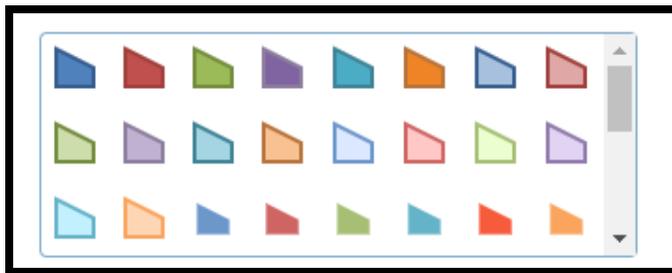
This step is optional and may be skipped entirely.

15. Make sure to check the box next to "Show Measurements" (circled in red in the image below) BEFORE you create your shape on the map. Once the box is checked, two drop down menus will appear. Select "Acres" from the Area Units drop down menu if it is not already selected. Select "Feet" from the Distance Units drop down menu if it is not already selected. See image below for what this should look like when you are done.
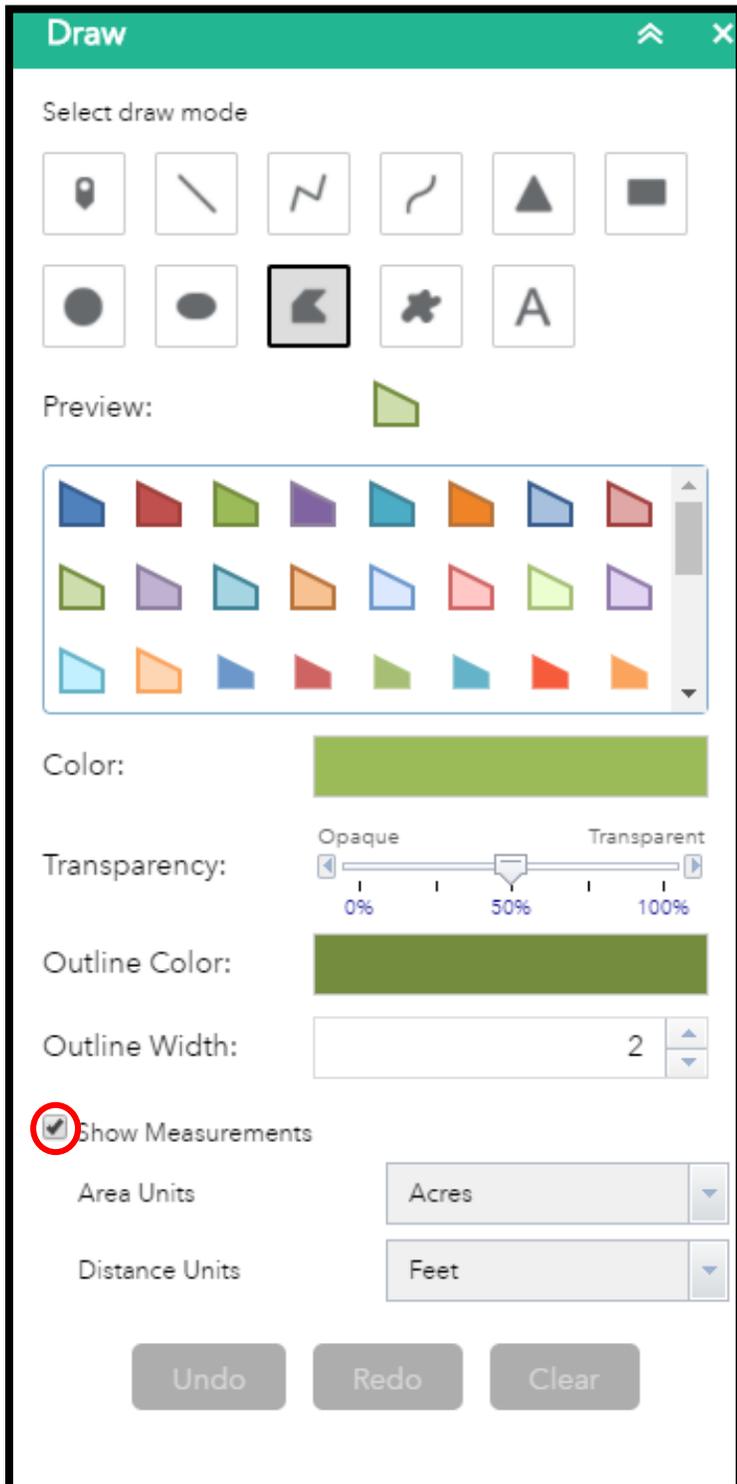
16. To draw a shape on the map, simply left-click once on the map in the location where you want the first vertex to be. See the image below for an example.
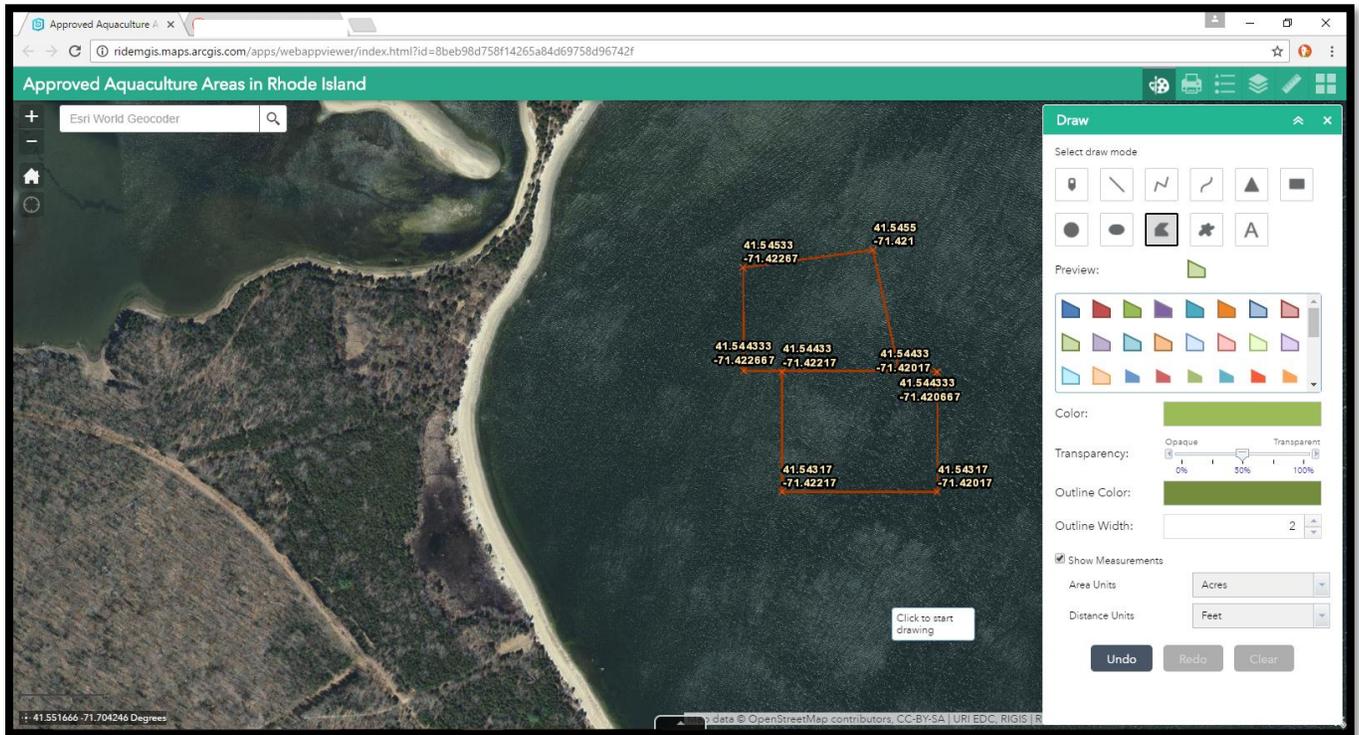

17. Then left-click once again in the location of the next vertex of the shape you are creating. You will see a line connecting the two points. See the image below for an example of what this will look like.
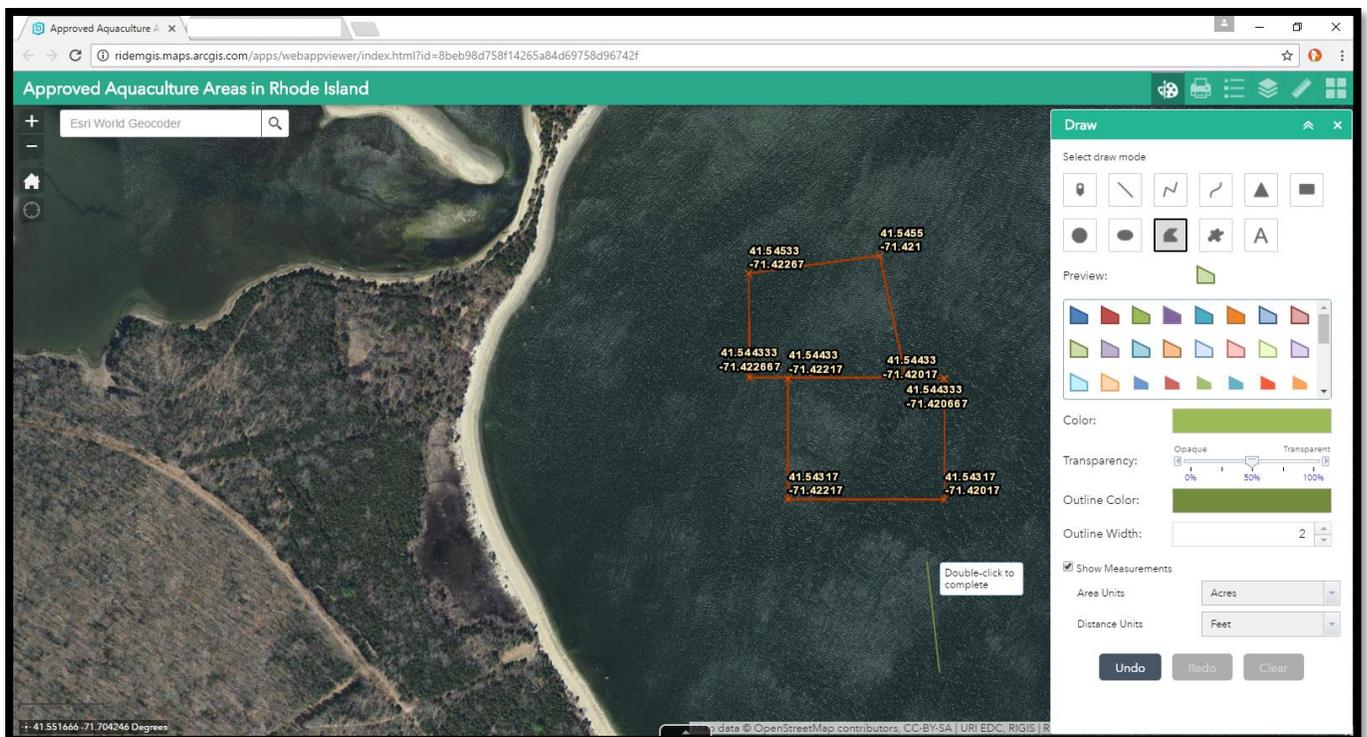
18. Repeat this process of left-clicking a single time at the locations of your desired vertices to continue adding corners to the polygon. It will fill the shape with the color you selected earlier before you are done creating the shape; it will update the area as you continue to add vertices.
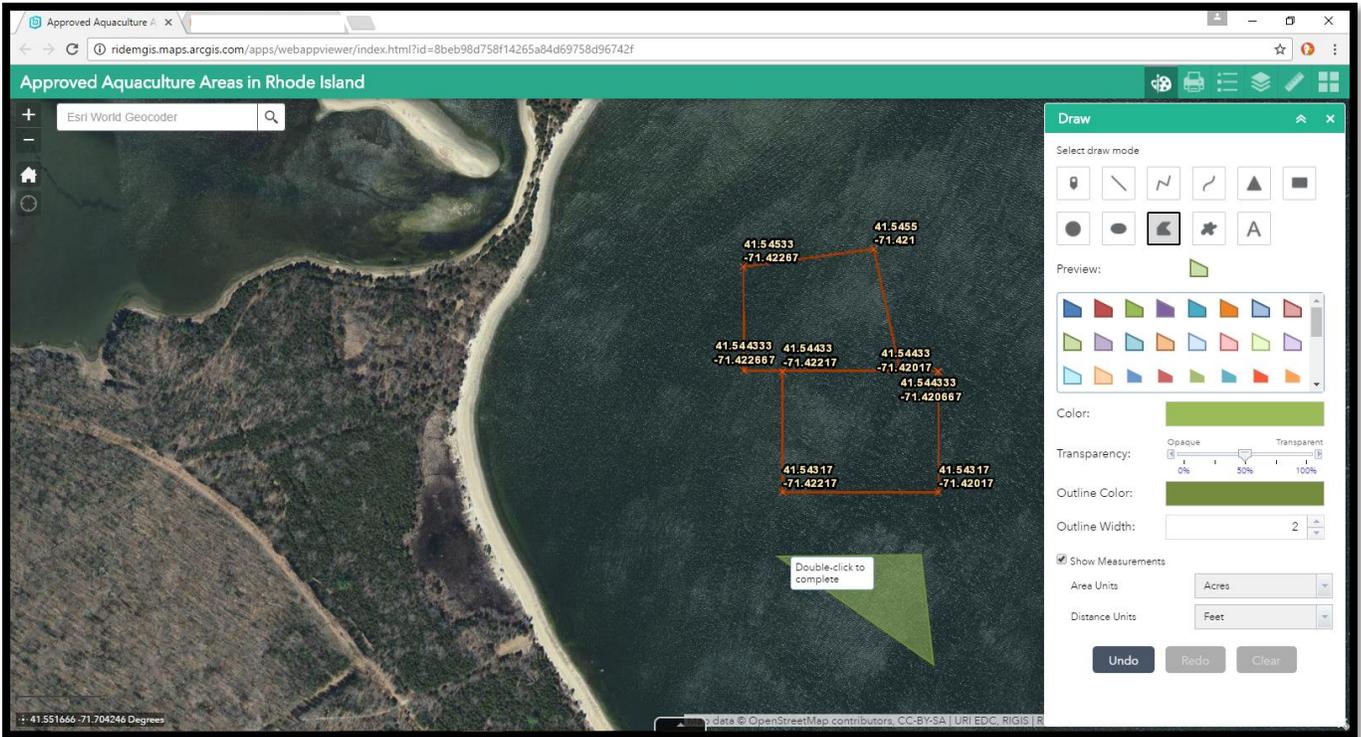
19. To complete the polygon, double click in the location of the last vertex. Once the shape is finished, it will display the area of the shape in acres and the length of the polygon perimeter in feet as black text on top of the shape.
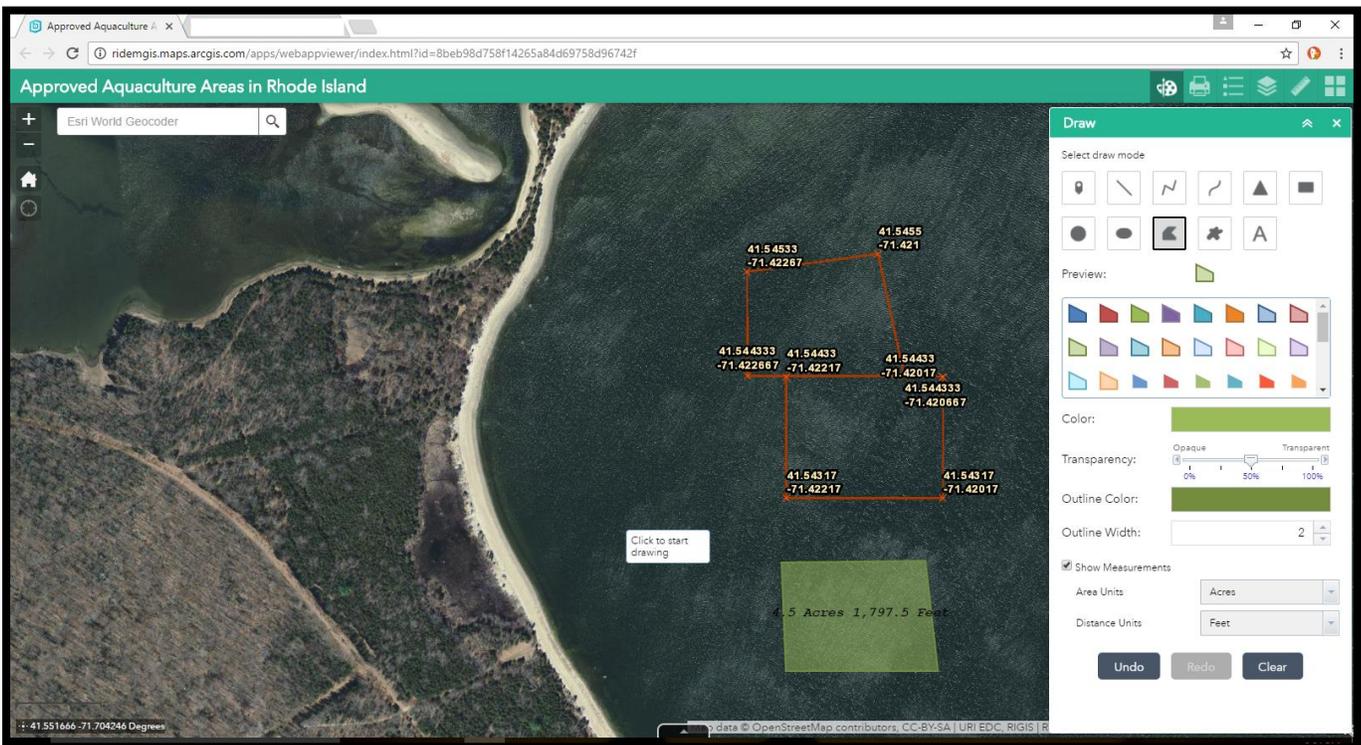
Finding the coordinates of your polygon vertices

20. To get the coordinates of this shape, you will need to switch to the Measurement toolbar. Click on the ruler icon in the top right corner to open the measuring toolbar (see the red arrow in the image below for the icon location).
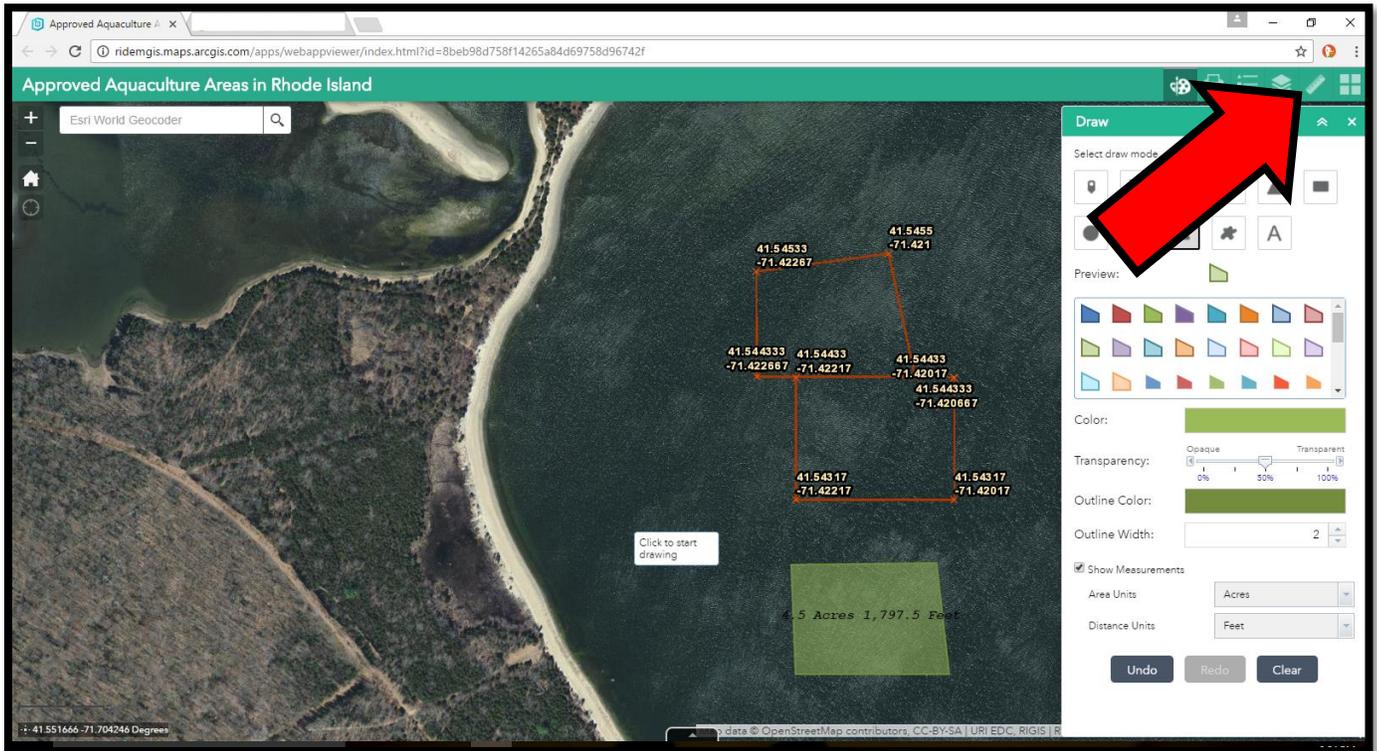
21. The following Measurement toolbar should pop up.
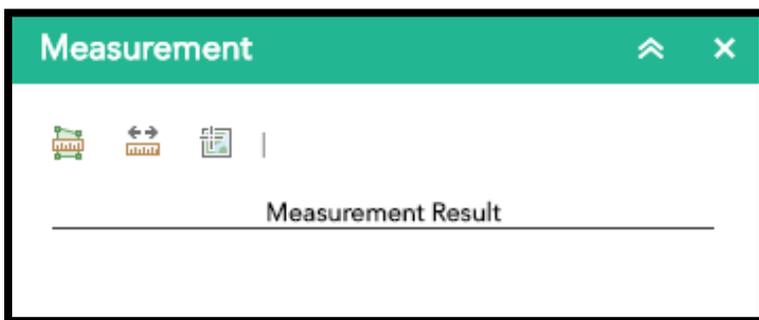
22. Click on the "Location" tool (in the red circle below).
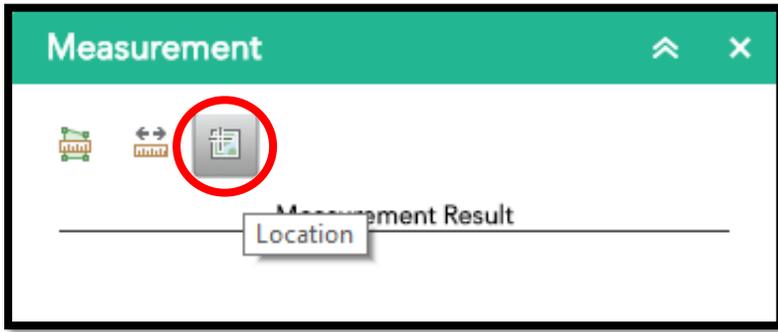
23. Now zoom in to your polygon and place your cursor over one of the vertices of the polygon and left-click once. A green marker will show up at the coordinate (in the red circle below). The latitude and longitude in decimal degrees of that location will show up in the measurement toolbar on the right side of the screen (in the red box below).
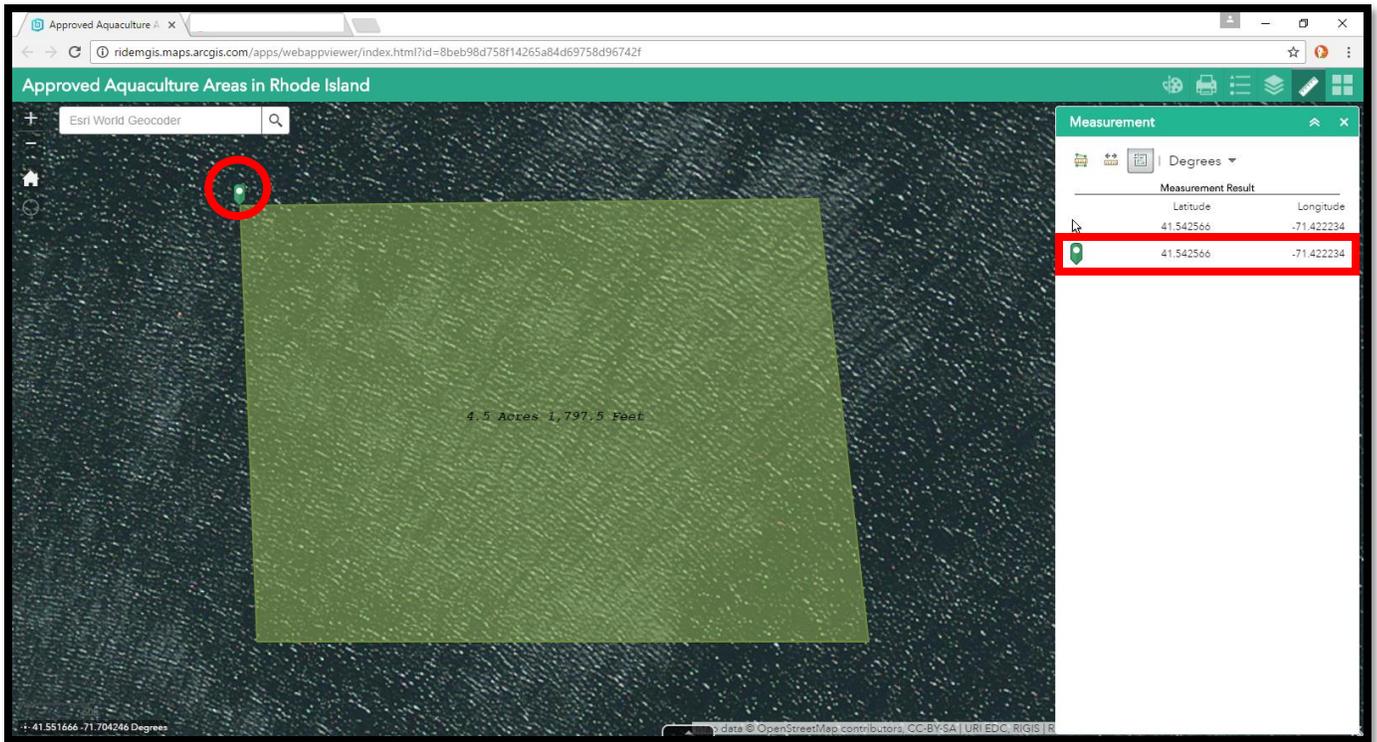
Write this coordinate down, and which corner of the polygon it is, if you are planning to submit an application to CRMC for an aquaculture site.

24. Repeat step 18 for all the corner/vertices of the polygon and continue to write down the coordinates of the polygon on a piece of paper or in a text document.
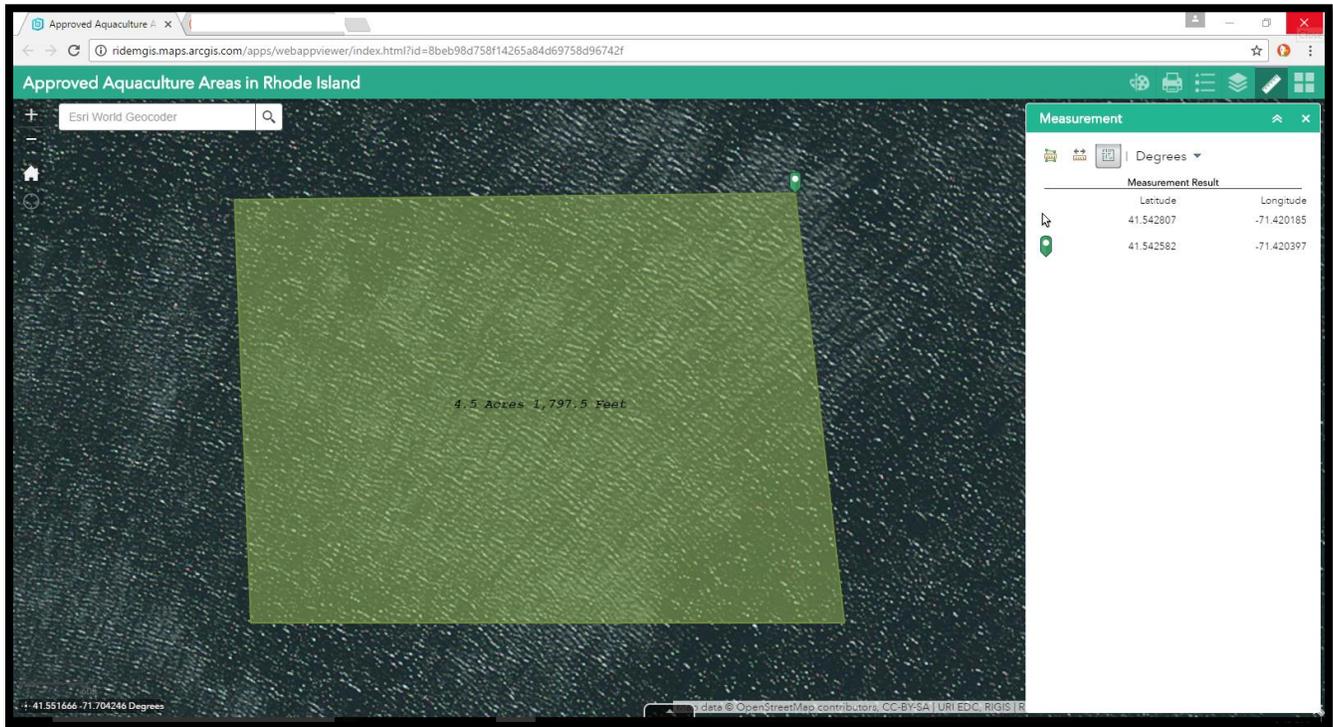
Printing a map of your aquculture location for use in CRMC location

25. Once you have all your coordinates, you can zoom back out to a level where you can clearly see the polygon you drew, as well as it's surrounding areas. The exent of the map that you can see is the same extent that will be printed. Click on the print icon:

The following menu will open up.
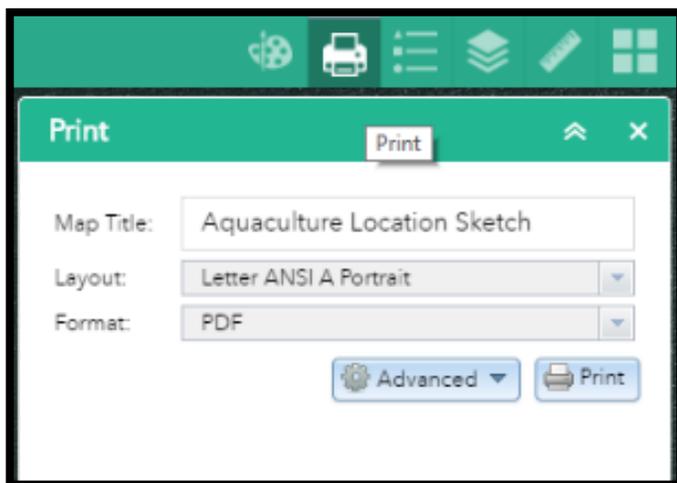
NOTE: You may want to make sure that the NOAA_RNC layer is turned OFF before you attempt to print your map, as this layer can create problems when the system tries to save your file. We recommend turning off the Rhode Island Aerial Photographs (April 2014) layer as well before attempting to print to limit the number of issues you may encounter. You can turn off these layers by unchecking their boxes in the Layers toolbar.

26. Within the print toolbar, leave all the options alone, unless you would like to change them. You can change the title by typing in your desired text (e.g. "John Doe Aquaculture Site Application"). You can also adjust the file type by selecting a different option in the Format drop-down menu. PDF, JPG, and GIF are the easiest file types to work with in this list. Leave the Layout option alone if you plan to print the map on a standard printer. "Letter ANSI A Portrait" is the name of the layout for standard 8.5x11 in. letter/printer paper.
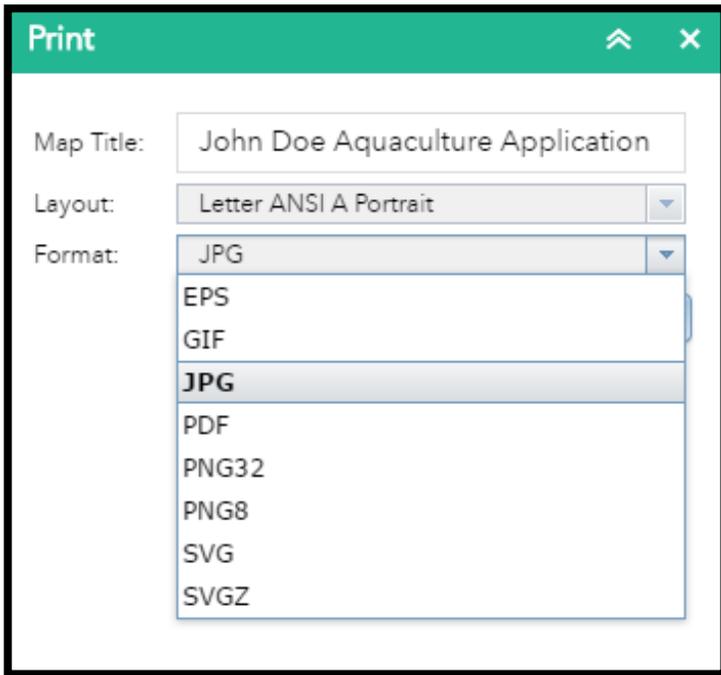
27. Next, left-click the "Print" button (circled in red below).
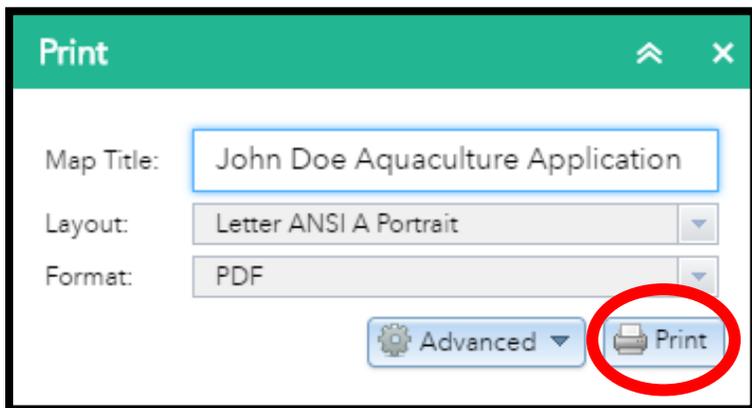
28. You will see the following progress bar while the system is preparing your map. This may take a minute; do not click on anything else while you wait.
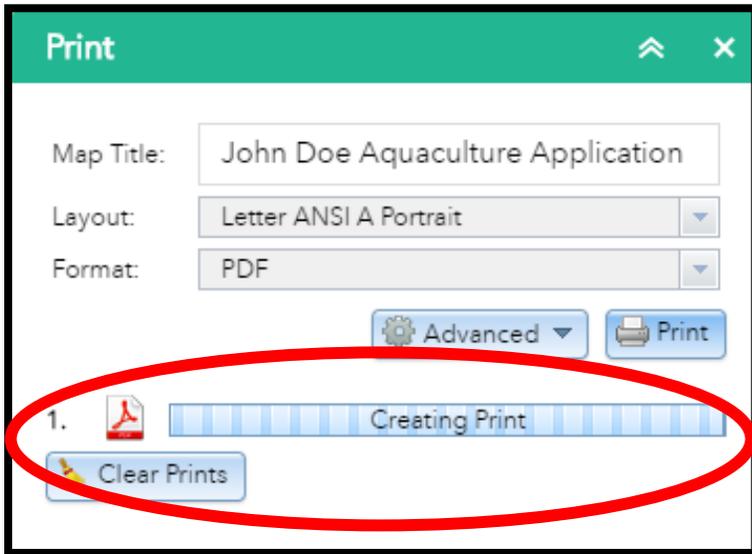
29. Once the system is finished creating your map, you will see the title you selected instead of the progress bar (like below).
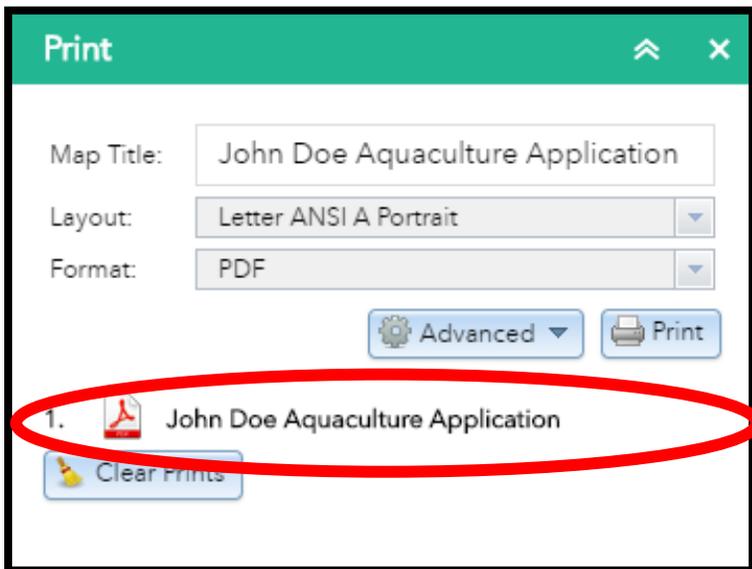
30. If you get an error (like the image below), go back to the layers toolbar and turn off the NOAA_RNC layer. Sometimes this layer can create problems during the printing process. You may leave the Rhode Island Aerial Photographs (April 2014) layer on, or you can turn it off and use the system's pre-set basemap. We recommend turning off both the NOAA_RNC layer and the Aerial Photographs layer to avoid problems.
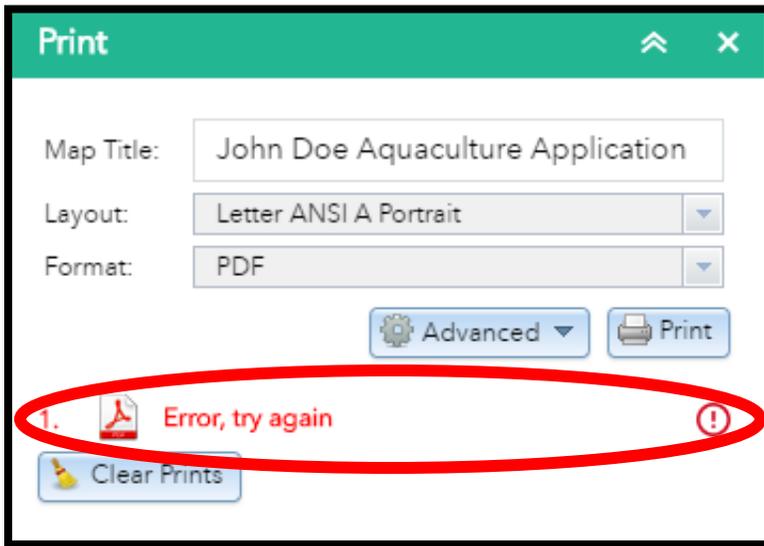

Then return to the print toolbar and try hitting the "Print" button again. Your file's name should pop up if this is successful.

31. Once the title of your map pops up, click on the title to open up the map.
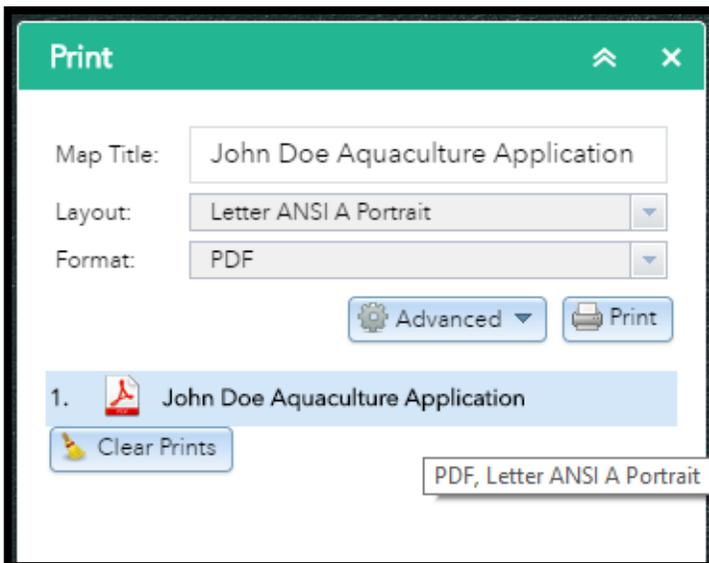
32. A new web browser tab should open up for you to view your map.
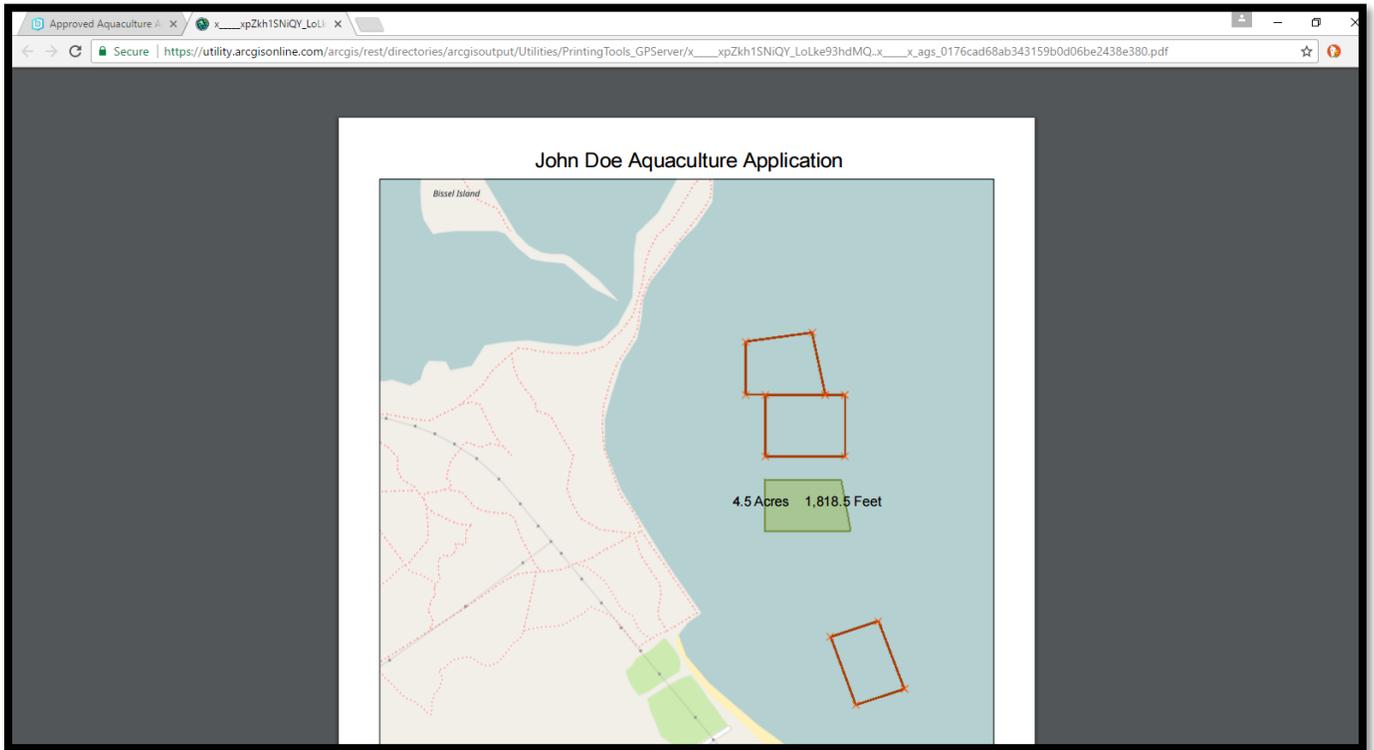
33. Save and print the map using your web browser's settings. Generally right-clicking once will open options for you to select from. The file will be saved in the format you selected earlier.
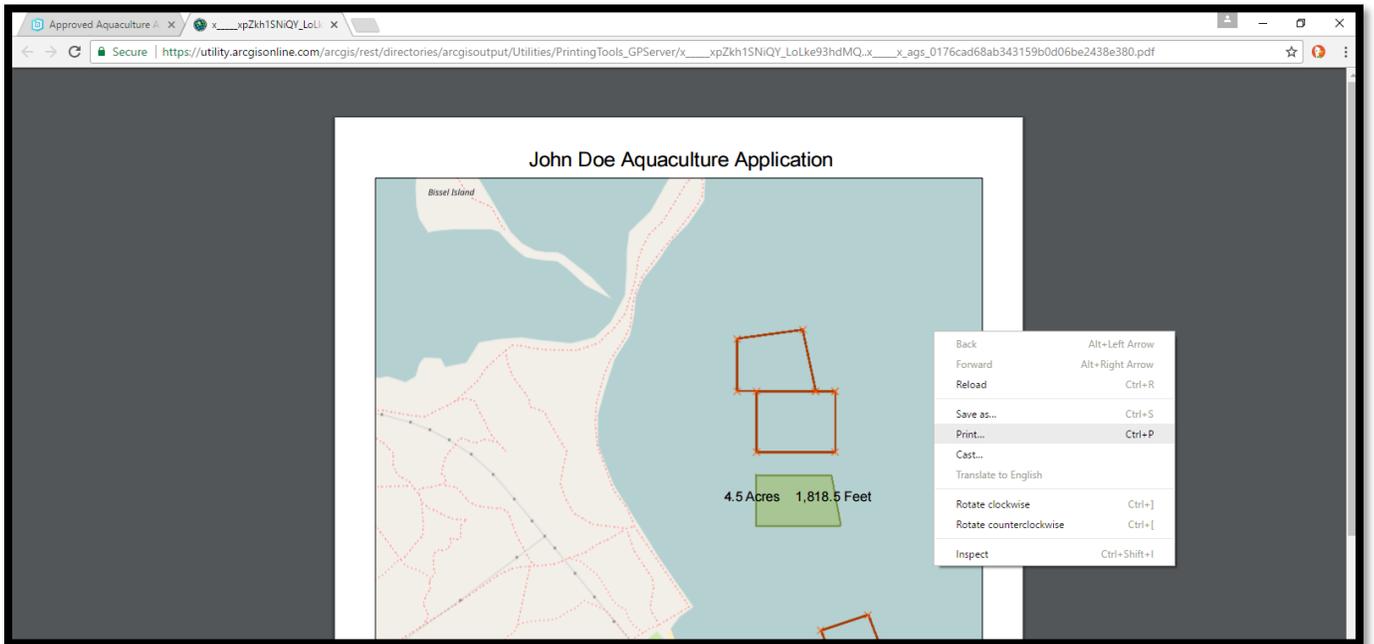
34. Remember to submit the coordinates you collected for the vertices of the polygon along with your map as part of your CRMC application.