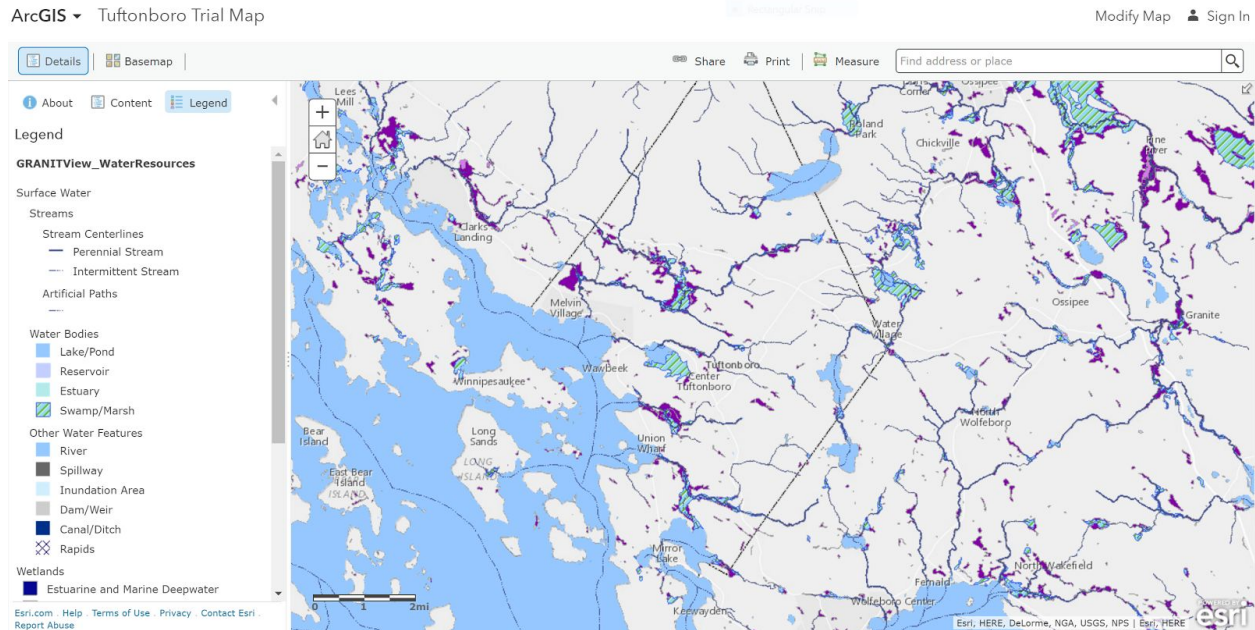


Using ArcGIS Online map of Tuftonboro, NH



All material developed and presented by Mark Howard

Geographical information provided by:

ESRI

[<http://www.arcgis.com/features/index.html>](http://www.arcgis.com/features/index.html)

GRANIT

[<http://www.granit.unh.edu/>](http://www.granit.unh.edu/)

NH DES

[<https://www.des.nh.gov/onestop/index.htm>](https://www.des.nh.gov/onestop/index.htm)

Regionally produced data layers by Lakes Region Planning Commission

[<http://www.lakesrpc.org/>](http://www.lakesrpc.org/)

Locally produced data layers by Tuftonboro Conservation Commission and other town sources

Topics covered:

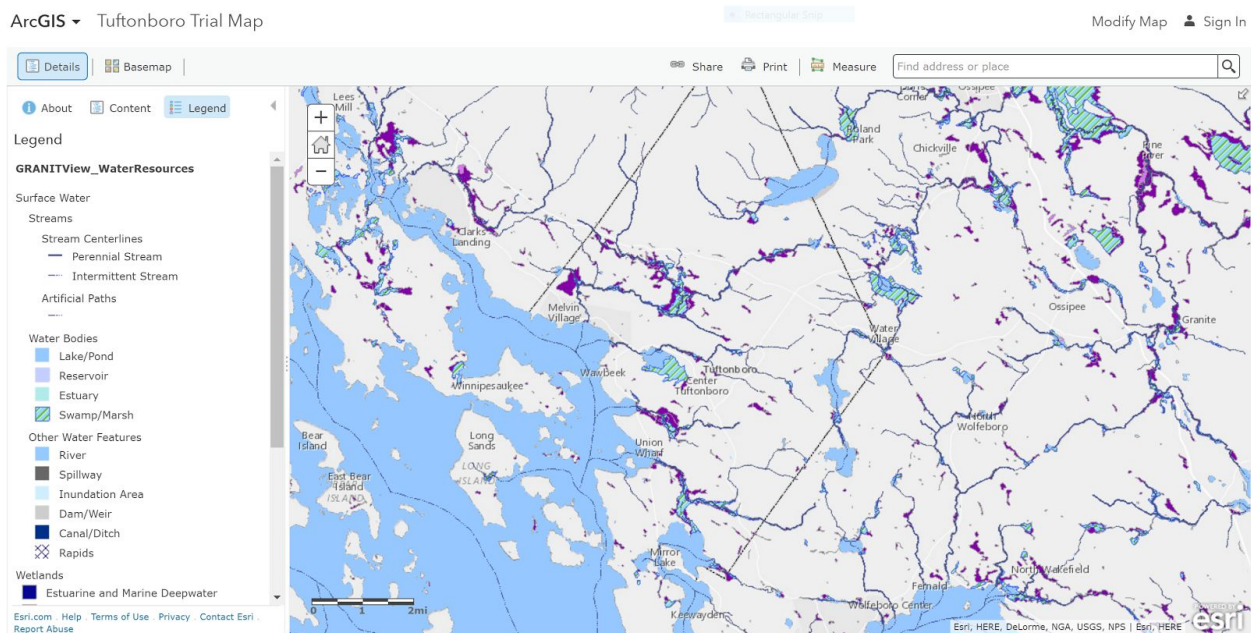
- Navigating to the online map from two different sources
- Introduction to the ArcGIS viewer
- Navigating around the map
- Changing the basemap
- Searching for an address
- Content panel
- Layer Transparency
- Detailed Information
- Measuring area and distance
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Getting to the Tuftonboro Map

There are two ways you can navigate to the Tuftonboro map. One way is to go to the town web site, navigate to the Conservation Commission, click on the “Interactive Maps” link and then click the link that displays “ARCGIS Map”. That will open up a new window in your browser that will look like the window below. The second way to reach the town map is to navigate to the website “www.arcgis.com” and then search for the map by the name, “Tuftonboro”. (The search function is in the upper right hand corner.) There will be two results, one of them is for the Mirror Lake Protective Association and the other one is called “Tuftonboro Trial Map”. That is the one we want. One the upper right hand side, there will be a link titled “Open in Map Viewer”. Click that link and the next picture you see will be the graphic below. Our map is being hosted by the vendor ESRI courtesy of the arcGIS server.

Working with the ArcGIS viewer

The default view panel displays a Topographic Basemap and the Content Panel containing details on what information is being displayed. The View Panel and Content Panel of the ArcGIS Viewer interface are labeled in the graphic below.



↑
Content Panel

↑
View Panel

Navigating around the map

Use the zoom slider bar, the 'plus' and 'minus' signs, to zoom in and out of the view. The middle button, the picture of the home, will take you back to the default view.



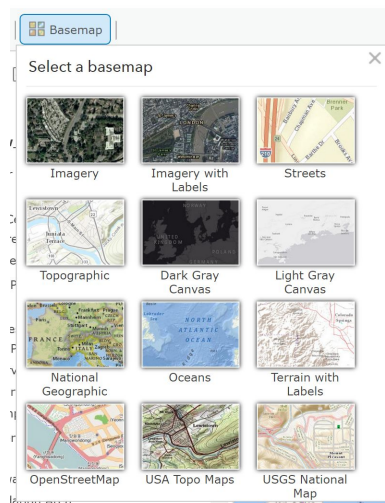
If your mouse has a wheel you can simply roll the mouse button in and out to zoom in and out.

To pan around the map, click and hold the left mouse button down and then drag the map to a new location.

To zoom into an area you want to view, hold down the Shift key, then use your mouse to define the area of interest.

Change the Basemap

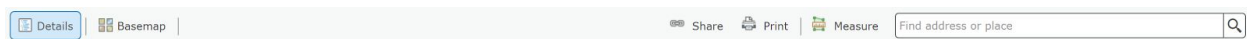
The main map that underlies all other data layers is called a Basemap. It is the map that is at the bottom of the pile of information you will be selecting and viewing. The default basemap for the town is called a 'Light Gray Canvas' and many other basemaps are available courtesy of the ESRI web site. To select a new basemap, click on the 'Basemap' button and you will see many other options exist.



The 'Light Gray Canvas' is typically used as a basemap because it is unobtrusive as a background and helps in highlighting the information you are trying to view, without cluttering up the map. You will likely find, after turning layers on and off, your map will get very cluttered as you try to display a lot of information.

Searching

Using the Search box at the upper right hand side of the Map Viewer will help you zero in on a particular address.

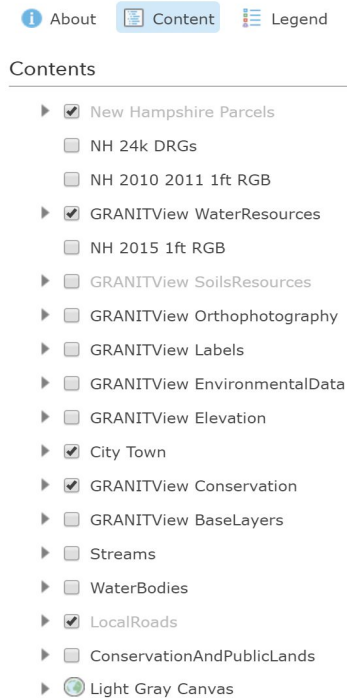


As you type in an address, you will see suggestions based on the area of town you are viewing and selecting an address, or clicking the magnifying glass button, will zoom the whole view into the area immediately around the address ESRI thinks you want to see. Accuracy is pretty good, but not excellent so be prepared to zoom out a little bit after you type in your address. You will also notice as you have zoomed in, more information becomes available for you to see. We will talk about this more as the lesson progresses. This ability to zoom in to the street view is a mixed blessing, as you will have zoomed in so close relationships between different layers of information will be very hard to determine. You will understand what we mean as we progress in the lesson.

For now, understand that you will be turning layers of information on and off quite regularly, and changing the basemap in order to get a better view of the exact data you are seeking. There are no hard and fast rules I can offer other than if what you see is undecipherable and very cluttered, then turn off the layers you have selected one by one until the map becomes more clear.

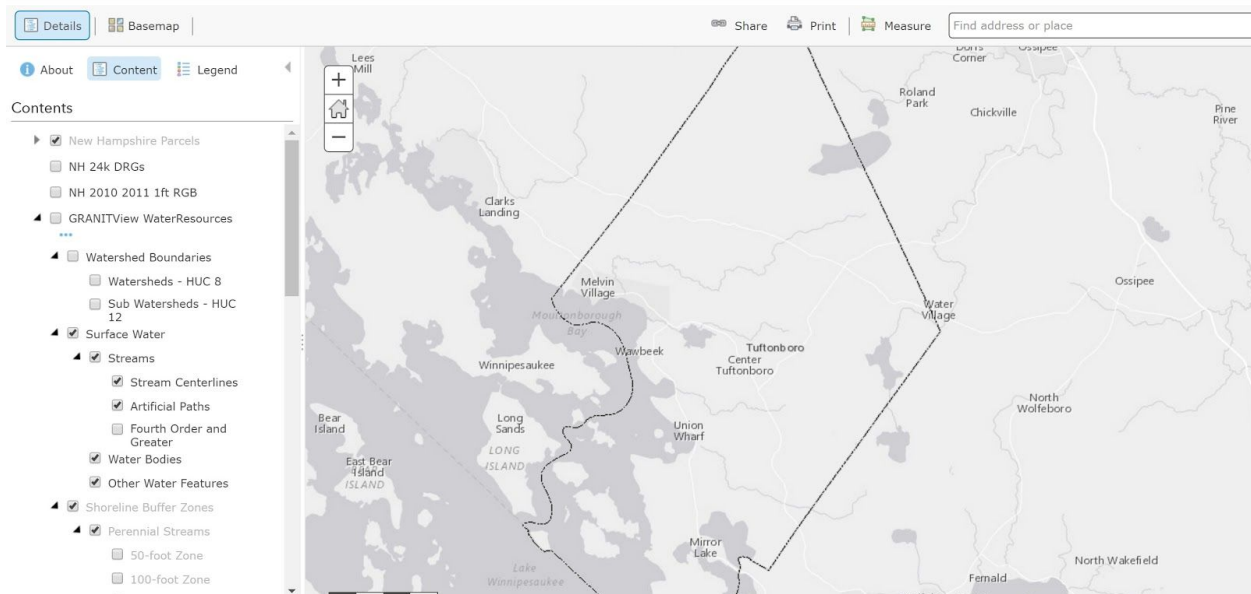
Content Panel

Up until now, we have been working on the View Panel, but let's take a few minutes to look over the Content Panel, and see what Content is actually available for viewing. On the left hand side of the screen, click the Content button. This will display all the data layers available for viewing. Below is the graphic you will see.

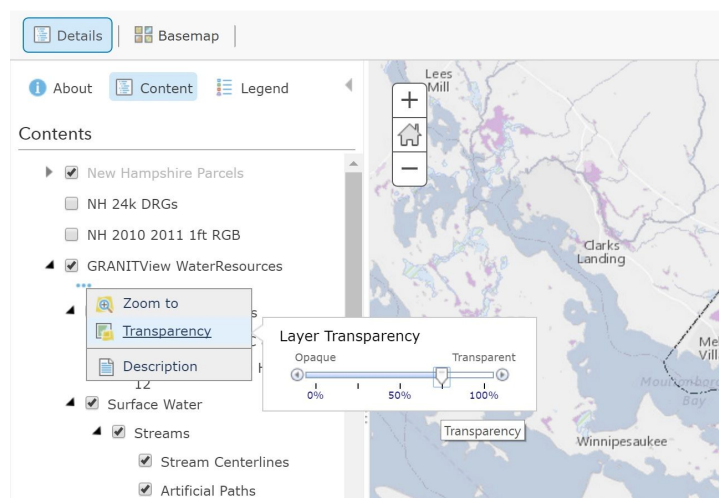


As you look over the list, the names may appear to be overly complicated but there is a reason behind the names. Every item that starts with the title “GRANIT” comes from New Hampshire's Statewide Geographic Information System (GIS) Clearinghouse. They are the master repository of all GIS information about New Hampshire. That’s why there can be a small delay in between the time you click the checkbox and the information is displayed on the screen. Your computer is reaching out the ESRI arcGIS server in CA, who is in turn reaching back to Durham, NH to grab information, then formatting the information you requested, then displaying the information on your screen. The advantage to this is GRANIT maintains the data, and we are assured of always getting the latest and greatest information the state has about our town.

Reviewing the other data options shows many items are not checked, and still other data items are greyed out, which indicated they are currently unavailable. Go ahead and expand the “GRANITview WaterResources” by clicking the arrowhead on the left and then uncheck the “GRANITView WaterResources” selection box. You will see the map changes right away to reflect the loss of the information.

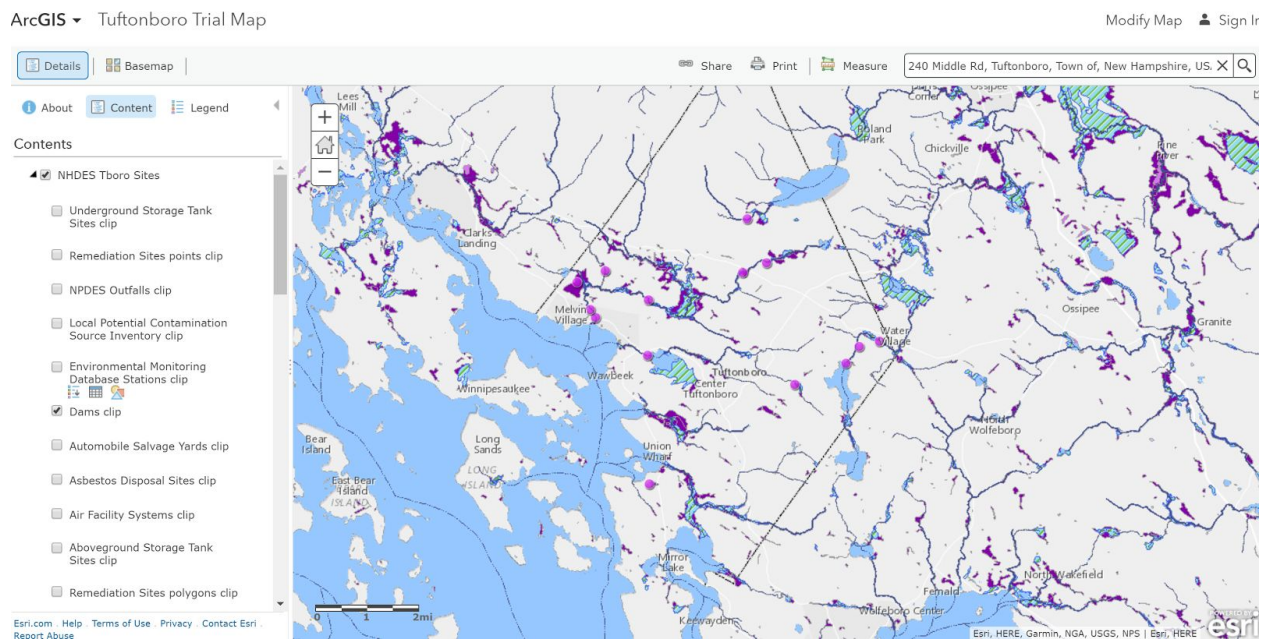


Scroll down in the content panel and you will see all the information GRANIT has concerning Water Resources. Some of the information is checked, some is not, and some of it is greyed out. Since you unchecked the main selection box, the whole category is deselected, you are not viewing anything in that category, so go ahead and check the main selection box to call back the information. Now the view panel looks like it did when you first started the program. Lets imagine you are happy with the information that is displayed, but would like to ‘tone down’ the colors and make the information fade into the background in anticipation of adding more data to the map. You can do this by adjusting the transparency of the information. Click the three dots under “GRANIT view WaterResources” and you will see the option to change the transparency of the whole layer.



As you play with the slider, you will note the information on the map becomes dimmer and dimmer. This can be very useful when you are trying to display many different layers of information. Information you would like to display that complements other information can be on the map, but pushed to the background in order to help highlight the main information you are trying to display. Now collapse the menu item “GRANIT View WaterResources” and click the home button to make sure the map is centered.

Now let's manipulate another layer of data. Scroll to the very top of the contents and you will see a layer titled “NHDES Tboro sites”. Click the small black arrow on the left hand side and expand the layer. You will see there are 15 pieces of data that can be viewed. As you look down the list, you will see only one has been selected; “Dams clip”. That data layer isn't being displayed because the parent of that layer, the “NHDES Tboro sites” hasn't been checked. Go ahead and check the box of the parent to display the dams data. Your screen should look like the picture below.

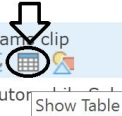


Detailed Information

At times, you may want to drill down into the layer for more information. Simply displaying data is not enough to answer all the questions you have, you will need to see all of the information that is available. The best way to accomplish this is to move your mouse over the data layer you are interested in and click the “table” icon that appears. The picture below shows you what you will see when you hover your mouse over the dams layer. There will be three icons that appear, the middle icon is the data table and has all the information. Click the table icon.

☑ NHDES Tboro Sites

- ☐ Underground Storage Tank Sites clip
- ☐ Remediation Sites points clip
- ☐ NPDES Outfalls clip
- ☐ Local Potential Contamination Source Inventory clip
- ☐ Environmental Monitoring Database Stations clip
- ☒ Dams clip
- ☐ Automobile Salvage Yards clip



On the bottom half of the “View Panel” a table will appear that contains all the information in that layer. By selecting an item in the table, a square highlight will appear on the map showing you where that dam is located. You can ‘control click’ other items in the table and all the corresponding data items will be highlighted on the map. Many items in the data table will be self explanatory, however, depending on the data layer you choose, there may be many acronyms that are all but indecipherable. For more information, you will have to research the data origin, and look for something called ‘metadata’. For NHDES data, you will have to go to their ‘One Stop Data Manager’, a link to the page follows
<<https://www.des.nh.gov/onestop/data-mapper.htm>>

ArcGIS ▾ Tuftonboro Trial Map

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Details Basemap Share Print Measure Find address or place

About Content Legend

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- ☐ Environmental Monitoring Database Stations clip
- ☒ Dams clip
- ☐ Automobile Salvage Yards clip
- ☐ Asbestos Disposal Sites clip
- ☐ Air Facility Systems clip
- ☐ Aboveground Storage Tank Sites clip
- ☐ Remediation Sites polygons clip

NHDES Tboro Sites - Dams clip (14 features, 1 selected)

FID	DAM	HAZCL	STATUS	USE	TOWN	NAME	CNTY
0	239.01	S	ACTIVE	R	TUFTONBORO	MELVIN RIVER DAM	CARROLL
1	239.02		RUINS	M	TUFTONBORO	MELVIN RIVER DAM	CARROLL
2	239.04		RUINS	M	TUFTONBORO	MELVIN RIVER DAM	CARROLL
3	239.07	L	ACTIVE	R	TUFTONBORO	LOWER BEECH POND	CARROLL

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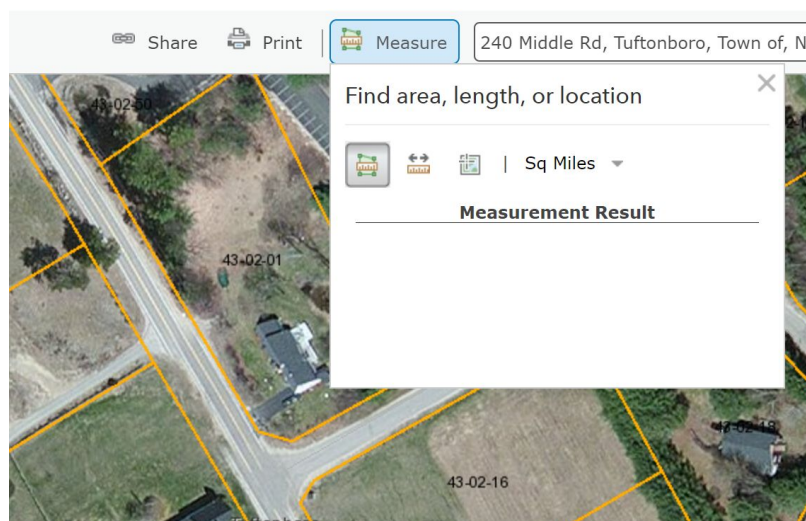
Measuring Area & Distance

At times, you may wish to measure a parcel of land, or many parcels at once and find out how much land is within a particular boundary or measure a distance between two points. That can be accomplished easily by using the tool 'Measure' found in the upper right hand corner of the View Panel. Lets start by focusing our search onto a property we all know well, the town hall. The best way to get there is type "240 Middle Road" into the search bar and the map will zoom to that address. As you do, you might well find the map is unreadable. Certain items you want to see are hidden from view only to be replaced by obnoxious colors or crude graphics. Using the knowledge you have gained, you should be able clean up the display in order to better see the property you want to view.

As a reminder, you might want to try deselecting 'Content' to eliminate layers of information you do not need. If that isn't enough, try changing 'Basemaps' in order to see the exact property you have zoomed. Often, when you have zoomed in this closely to an individual property, the best basemap to use is the "Imagery" map. When you have the picture you want to see, then look for the "Measure" option right next to the search bar.



Clicking that tool once brings up an information box that shows you the current settings. The box will look something like this:



The button on the far left is indented and indicates the type of measurement that will be made. In this case, area. If you want to measure a distance, then select the ruler, or if you want to know the exact Lat / Long, then select the next button over. On the right, you can select the

units the measurement will be displayed. To close the box, simply click the “X” in the upper right hand corner.

Printing

The print options are limited which can be good or bad depending on your point of view. Once you have the map centered on the area of interest and are displaying all the information you want to display, click the print icon which is next to the Measure icon you used earlier. A new page will open up and within a few seconds, you will have a copy of the map area you have been working on. There is no way to add a title or legend beyond what you see on your screen. What you see is all you are going to get.

Then, it is up to you to print the screenshot or select print from the browser you are using. Since so many browsers exist, and the methods of printing can be so varied, I cannot cover every possible option, it is up to you and your knowledge of the program you are using. I suspect if you right-click your mouse at the edges of the page you are viewing there will be a print option.