

Functionality Overview | ELUCID-Flint River Watershed

I. Accessing themes

- A. There are six working themes in ELUCID. You can select from the following themes: Generic, Water Quality, Land Protection, Project Mapping, School District, and Flint River Watershed Tour. The Urban Planning and Stormwater Management themes are in development.
- B. Click on the heading of the theme of interest. The menu for that theme will expand and provide you with a brief theme description. This menu allows also you to access the theme's tutorial and map. Note that all figures in this overview will be referencing the Water Quality Theme.
- C. To view tutorials for a particular theme, click on the "i" button at the right-hand side of the screen. You have the option to view a written tutorial. Video tutorials for ELUCID may be developed in the future and will also be accessible from the tutorial page.
- D. To access a theme's map, click on "Go to Map" underneath the theme's heading. Note that if you wish to open multiple maps at once, right-click in this area and choose to open it in a new tab.

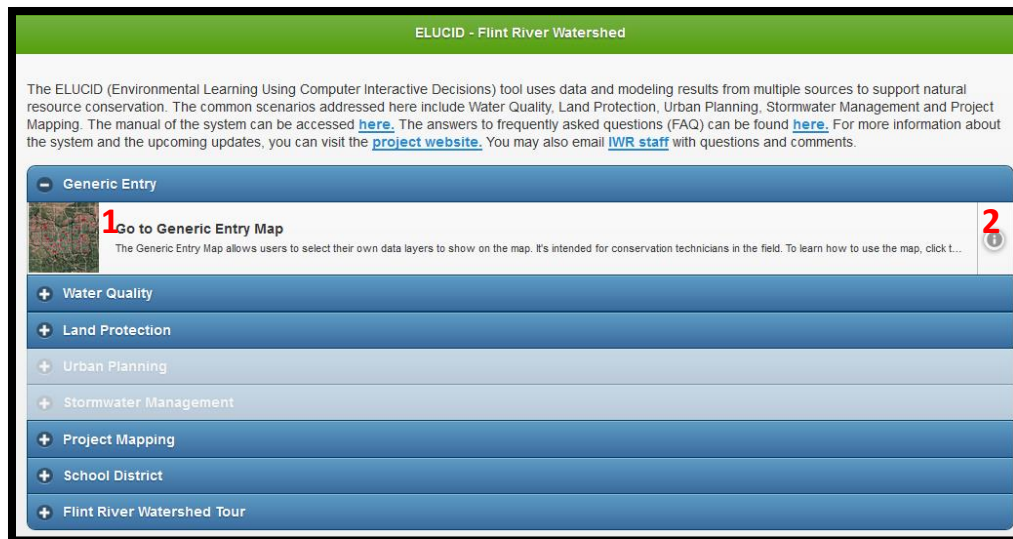


Figure 1.1: ELUCID- Flint River Watershed main page. 1: Access a theme's map. 2: Access a theme's tutorial.

II. Working with map layers

All map layers are accessed in the "Map Content" bar at the left side of the mapping interface. Every layer in the "Map Content" bar is accessible in each theme's interactive map.

A. Layer groups

All layers in ELUCID are actually part of layer groups. The menus for these layer groups are collapsible. To expand a layer group, click on the plus sign. To collapse a layer group, click on the minus sign next to its heading.

B. Turning a layer on

To turn a map layer on (making a layer visible on the map), check the box next to a layer's heading. Uncheck the box to turn a layer off. The same holds true for layer groups. Note that each theme map except for the Generic Theme will automatically load certain layers relevant to that theme. For instance, the Water Quality map will automatically load soluble reactive phosphorus sampling data.

C. Layer group transparency

Individual layers cannot be made transparent. Transparency can only be adjusted for layer groups. So if you wanted to adjust a layer in the "Water Quality Maps" subgroup, you would have to adjust the entire "Flint River Watershed" layer group's transparency. Transparency can be adjusted by moving the slider beneath its heading.

D. Legends

Each layer has its own legend. Legends are automatically turned on for layers drawn on the map. To view the legend for a layer not drawn on the map, click on the plus sign next to the layer's heading.

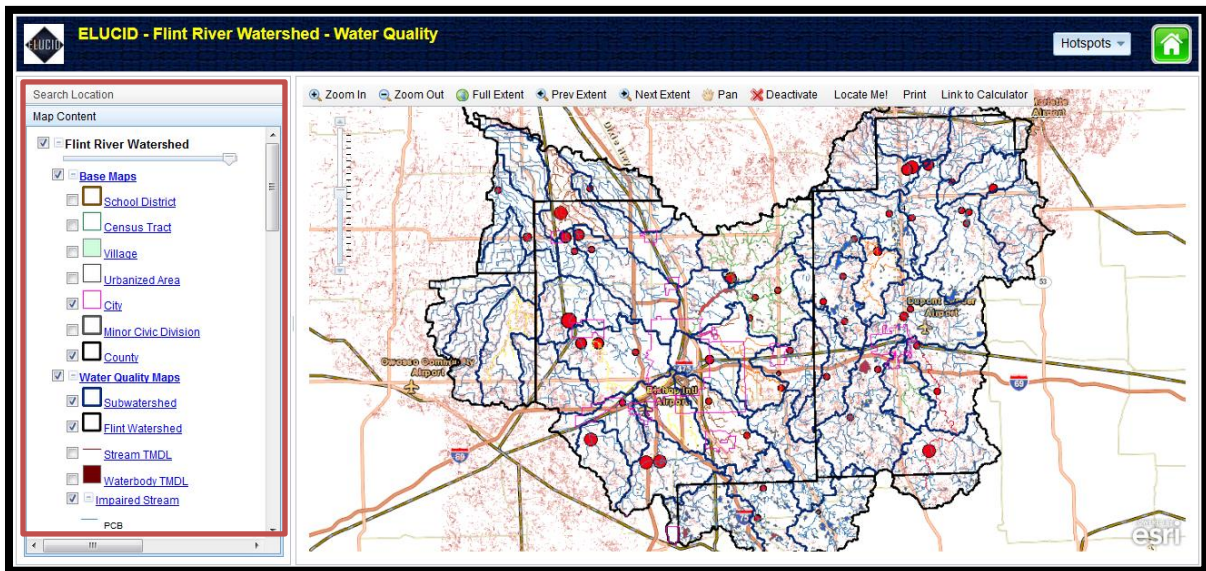


Figure 1.2: Map content.

E. Flint River Watershed layer group

The Flint River Watershed layer group consists of four subgroups and contains the "meat" of ELUCID. Each group is discussed in further detail below.

1. Base Maps

This subgroup contains *School District, Census Tract, Village, Urbanized Area, City, Minor Civic Division, and County* data layers. The *City* and *County* layers are automatically turned on when you load a theme's map.

2. Water Quality Maps

This is the largest subgroup of layers in ELUCID. Data layers relating to water quality and nonpoint source pollution are found in this subgroup. To learn more about these layers please read the applicable theme tutorial.

3. Land Protection Maps

This subgroup contains data layers relating to connectivity of conservation efforts and those that examine conservation efforts at the field-scale (e.g., concentrated flow lines).

4. Physical Maps

This subgroup contains the following layers: *Wetland, SSURGO Soil, Geology, Land Cover 2011, and DEM*. None of these layers are automatically loaded in a theme's map.

F. World Base Maps

There are three world base maps in ELUCID. All three layer groups are automatically loaded onto each theme map. They are described in more detail below.

1. Cities and Townships

This layer group provides place names and boundaries for features such as cities and counties.

2. Roads

This layer group displays roads and highways.

3. Aerial Photos

This layer group provides low to high resolution aerial imagery.

G. HIT Sediment/Erosion

This layer group highlights results from the "[High Impact Targeting](#)" model which estimates agricultural erosion and sediment loading to streams. The HIT *sediment* and *erosion* layers are rasters that display relative high risk areas for erosion or sediment loading with 10-meter resolution and were developed with support from the U.S. Army Corps of Engineers. Lighter colors indicate moderate erosion or sediment loading, whereas darker colors can indicate high or highest erosion or sediment loading.

III. Zooming

All zooming tools are accessed in the toolbar at the top of the map. Refer to Figure 1.3 for all zooming tools.

A. Zooming in and out

To zoom in, click the “Zoom In” button, draw a box around the area you’d like to zoom to, and the map will zoom to that location. To zoom out, repeat the process just described, but click on the “Zoom Out” button instead. Note that you can also use the scroll wheel on your mouse to zoom in or out.

Once you are done zooming, *it is imperative you click on either the “Deactivate” or “Pan” buttons.* If you forget to do this, and click on the map, it will attempt to zoom in/out on that location.

B. Full extent

To return to the full extent of the Flint River Watershed, click on the “Full Extent” button.

C. Previous and next extent

You can zoom to the previous map scale and location by clicking on the “Previous Extent” button. If you use the “Previous Extent” zooming tool, the “Next Extent” button will return you to the map extent you were at before using the “Previous Extent” tool.

D. Pan

The pan tool is the default active tool and allows you to move the map as you see fit. If you clicked on the “Zoom In” or “Zoom Out” button and want to return to pan mode, click on the “Pan” button or the “Deactivate” button.

E. Deactivate

The “Deactivate” button deactivates the zooming tools. Click on this after using the “Zoom In” or “Zoom Out” tools.

F. Locate Me!

The “Locate Me” button can be used on tablet devices to pinpoint your location in the field.

G. Print

The “Print” produces an image of the *Flint River Watershed* layer group only.

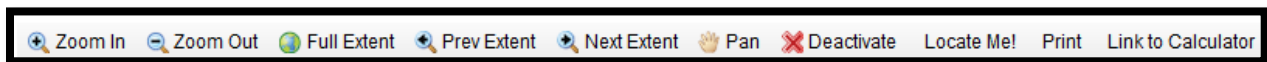


Figure 1.3: Map Toolbar

IV. Linking to Calculator button

- A.** The “Link to Calculator” button is next to the zooming tools. This allows you to link to a field-scale analysis calculator developed with support from The Nature Conservancy and the U.S. Army Corps of Engineers. This calculator will allow you to estimate nonpoint source (NPS)

pollutant runoff and estimate the impact a best management (BMP) practice will have on reducing NPS runoff.

- B. To link to the calculator, first locate an area of interest at the field-scale. When you're ready to access the calculator, click on the "Link to Calculator" button once. You will know the calculator has been activated when cursor reads "Click to add a point." Click on the area of interest and you will be redirected to that field-scale analysis calculator.
- C. Make sure that you only select this button when you want to use the calculator. Once you activated the linking button, you will not be able to deactivate it. If this happens, you will have to refresh the page.

V. Place Finder tab

- A. The "Place Finder" tab allows you to search for watersheds and locations on the map. It is located above the "Map Content" bar. Click on the "Place Finder" tab to access this feature. View Figure 1.4. To return to the "Map Content" bar, click on the "Map Content" tab at bottom of the window.
- B. To search for a watershed, click on the dropdown menu and select a subwatershed. Hit the "Find" button and the map will zoom to that subwatershed and shade it in black.
- C. You can also search for specific street addresses, townships, cities, or even intersections using this feature. To search for an address, type it into the text box and hit the "Locate" button. The map will zoom to place a marker at the specified location.

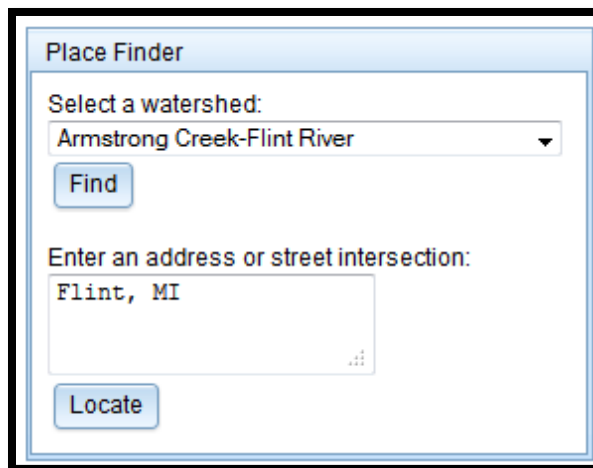


Figure 1.4: "Address Finder" tab.

VI. Identify Tool

- A. Each theme map contains a custom query function using what is known as the "Identify tool." You can click on certain turned on layers within the Flint River Watershed, and the system will gather preselected attribute data for layers at that particular location. The data will be

returned to you in a pop-up box. If no data are returned, it means the preselected attribute data are unavailable for that location. See Figure 1.5.

- B. The data that's provided in the Identify window depends on which theme map you're viewing. For instance, the Water Quality theme returns attribute data for soluble reactive phosphorus sampling points, water body impairments and township/city.
- C. Some queries also contain links to external websites, which will be opened in a new tab.
- D. On occasion, the system will return data for more than one point, especially when zoomed out at smaller scales. To fix this, zoom in further, and query the location again.

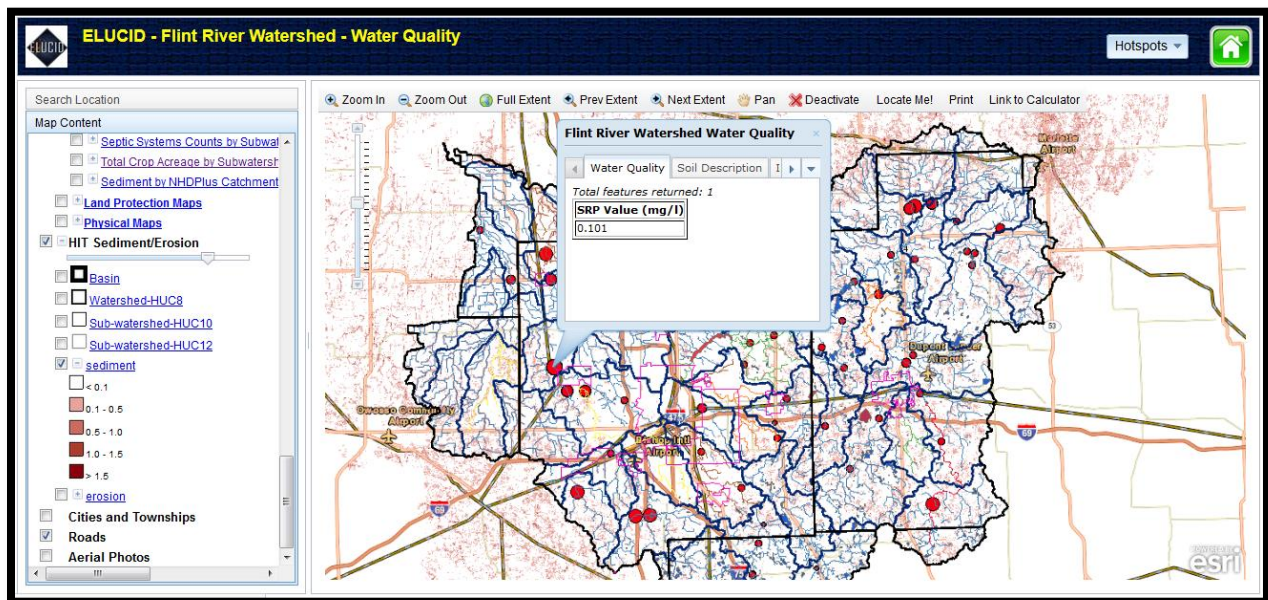


Figure 1.5: Identify tool example.

VII. Taking a screenshot

A. Windows Users

Click on the "Print Screen" button on your computer's keyboard. It may read "Prt Sc." This copies an image of your screen. Paste it into Paint, Microsoft Word, or another program of your choice by hitting Ctrl V or right-clicking and selecting "Paste." Crop the image if needed. If you have Windows Vista or a later version, you can use your system's "Snipping Tool" under Accessories to create a screen capture as well. This will automatically copy your selection and you can paste it into a program of your choice or save the image.

B. Mac Users

Use the following keyboard shortcut to copy an image of your screen: Command > Control > Shift > 3 or your system's Spotlight program. This copies an image of your screen. Paste it into a program of your choice using Command V and crop the image if needed.

C. For further information on how to take a screenshot, please visit take-a-screenshot.org.

VII. Contact information

Should you have questions or comments regarding the Flint River Watershed ELUCID system, please contact Laura Young at youngla9@msu.edu. If you are experiencing technical difficulties, please contact Yi Shi at shiyi1@msu.edu.