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Lesson Plan

www.epa.gov/enviroatlas

Exploring Your Watershed: Mapping with EnviroAtlas
These materials are part of EPA Report #EPA600/R-18/203.

Student Name: _____

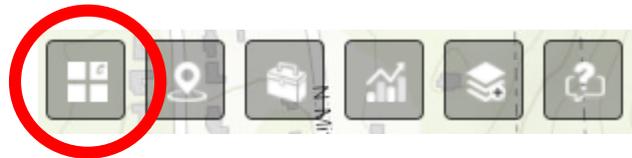### <u>STUDENT INSTRUCTION PAGE FOR USING ENVIROATLAS ONLINE</u>
Use this instruction page with: *"Student Handout: EnviroAtlas (paper and internet maps), Teacher or Internet-led, without instructions"*

1. **Go to the following website:** https://www.epa.gov/enviroatlas/enviroatlas-interactive-map   Once on the website, **click on the map image** that looks like the image below:

2. The next page will show the terms and conditions of using the *EnviroAtlas* tool. Click on **"I understand and agree to the terms and conditions of this disclaimer."**

3. Next, you'll see the map. In the left corner of the map, there is a white box that says *Esri World Geocoder.* Type in the name of your school (example: *Cameron Park Elementary School*). Choose your location from the list that pops up. Then, the map will zoom in to your school.

4. Once zoomed in, you'll need to change the base layer to see some of the features around your school. To do this, click on the icon with four boxes in it (see right). This is the **"Choose Basemap"** option.
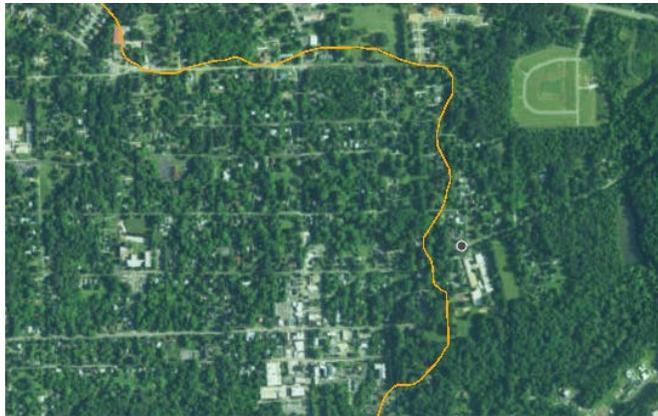
5. **Choose basemap.** The options for basemaps will appear. Choose **"Imagery."**
Minimize the Basemap Gallery window by clicking the line in the upper right-hand
corner of the box.

6. **Turn on watershed layer.** To do that, click on the upper left where it says, **"Boundaries
and Natural Features."** Click in the box that says **"Hydrologic Unit Code (HUC)
Boundaries and labels."** The **layer list** will pop up to the right on your screen. See
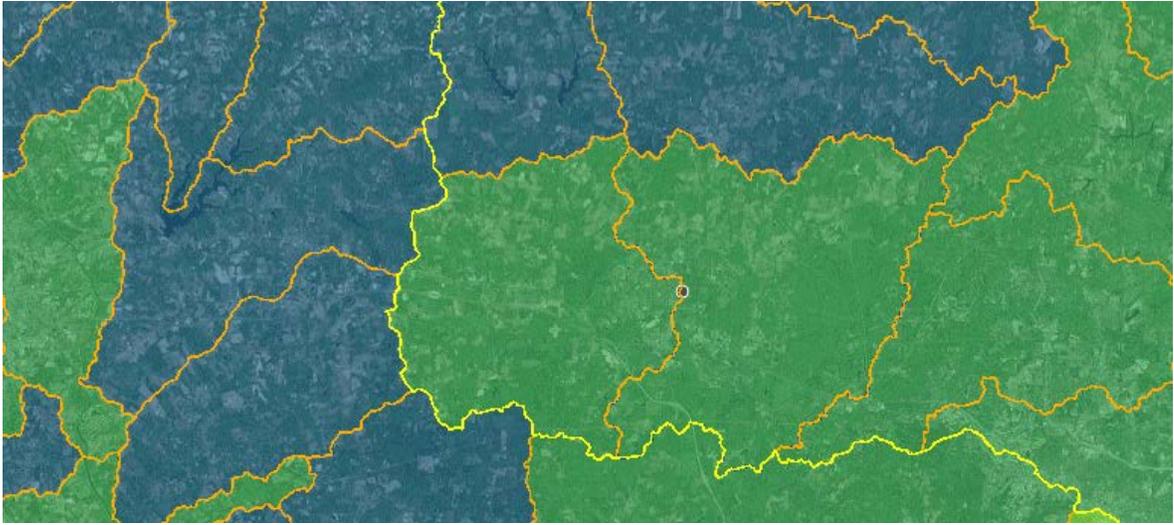image below.

7. Click the box next to "Hydrologic Unit Code (HUC) Boundaries and labels." To choose
which HUC boundaries you would like, click on the words "Hydrologic Unit Code (HUC)
Boundaries and labels," and you can check or un-check boundaries as you wish.
Minimize the Layer List by clicking the line in the upper right-hand corner of the box.

8. **Generate Map #1.** At this point,
zoom out slowly on the map using
either the zoom bar in the upper left
corner of your map or the scroll
wheel on your mouse if you have
one. Continue to zoom out until
you can see the orange/yellow lines
surrounding the area of your school
(like in the example at right). Can
you see your school? Discuss with
your group where your school is located.

9. With your mouse, click on the tab at the top left of the page that says, "Ecosystem
Services and Biodiversity."

10. In the box that says *Search all layers,* type in **"Percent cropland."** A box will pop up
below that says "Land Cover: Type." Click on the checkbox next to **"Percent
cropland."** The **layer list** will pop up to the right on your screen again. This time, click
the box next to **"Percent cropland."** To see the legend, click the words **"Percent
cropland."**

11. **Generate Map #2.** Zoom out a little bit until you have multiple HUCs in the frame (see image below). You can leave or uncheck different HUC-levels as it suits you (the default setting shows all HUC 4s, HUC 8s, and HUC 12s (different levels of watersheds and sub-watersheds). If you would like, you can to adjust the transparency of this map so that the school and surroundings can be identified through the colored watersheds. To do so, click on "Percent cropland" in the Layer List. Then select "Transparency," and change the transparency as you see fit. **This is Map #2.** Answer questions 1-2 on your handout.
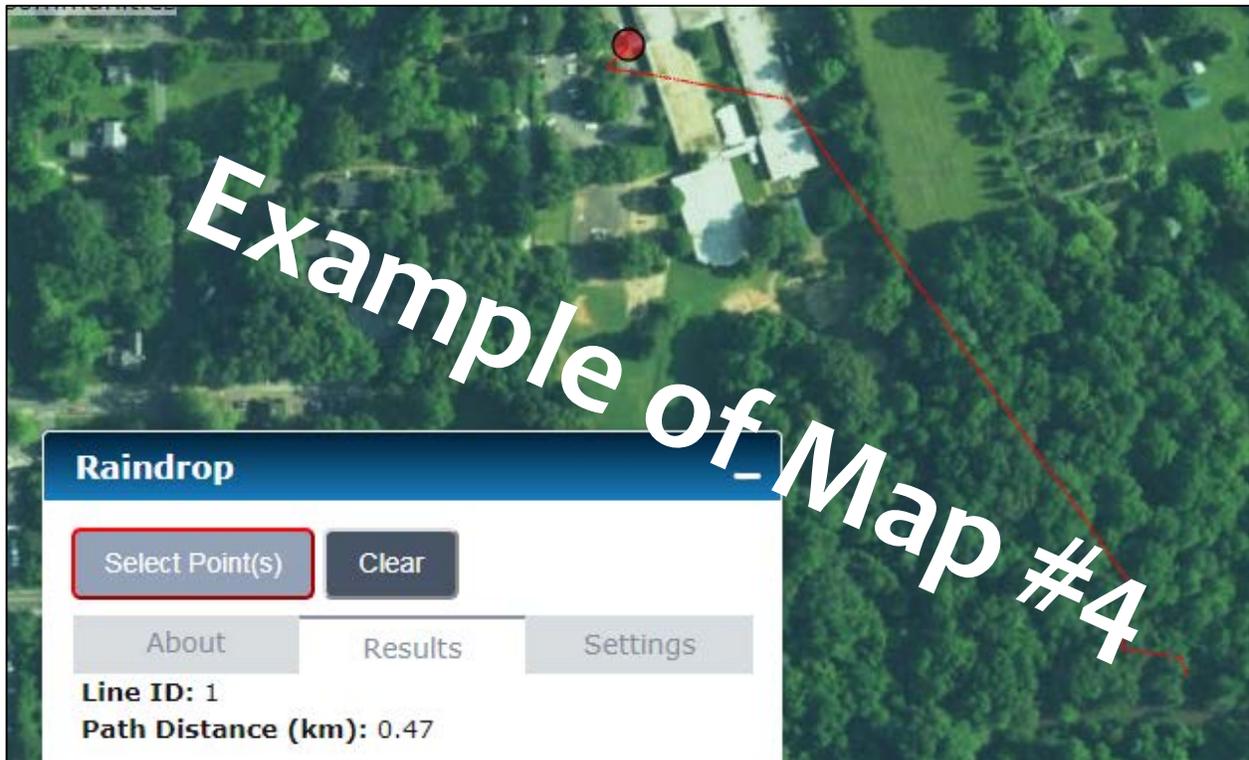

12. In the Layer List, uncheck the "Hydrologic Unit Code (HUC) Boundaries and labels." Zoom out until you can see your State. If you cannot see the outline of your State, follow these quick steps:
     - Click "Boundaries and Natural Features"
     - Under "Political Boundaries," click the checkbox next to **"States, County, and Census Block Group boundaries."**
     - In the Layer List to the right, click the little arrow to the left of **"States, County, and Census Block Group boundaries."**
     - Click the box next to "States" to put the state lines onto your map.
     - Minimize the Layer List.

13. **Generate Map #3. Look at the entire State. This is Map #3.** Answer questions 3-4 on your handout. Go back into the Layer List by clicking the icon in the upper right. Click **"Remove All."** Minimize the layer list.

14. Click the icon along the top of the map where it says, **"Analytical Tools."**

15. At this point, if you're zoomed out, zoom back in to your school. You can do this simply by pressing "enter" in the search box if the school name is still there. Click on the button that says **"Raindrop."** A window will appear. Click **"Activate Tool."** Move the Raindrop window out of the way by dragging it.

16. Click on an outdoor area near your school (Note: If you went outside to talk about watersheds, try to find the spot where you went and click on that!). A red dot and a red line will appear. Feel free to zoom in or out so that the whole red line. You can drag and drop the Raindrop Tool widget if it is in your way.

Still have questions or want help with navigating *EnviroAtlas* online?
Email EnviroAtlas@epa.gov