



Explore, Lesson #3: EnviroAtlas Webquest

These materials are all part of EPA Report #: EPA/600/R-18/231.

Time Consideration

Prep time: Time to familiarize yourself with EnviroAtlas tool: 10-20 minutes, Actual Prep Time: 5-10 minutes, **Activity time:** 20-30 minutes

Materials

Printed handouts, student computers, internet access

Teacher Preparation

1. Reserve a computer lab or laptops for student use. If possible, having students work in pairs is best for this activity.
2. Print the **EnviroAtlas Webquest** handouts (below).
3. It might be helpful for you to familiarize yourself with EnviroAtlas and the Interactive Map prior to completing this activity with your students. Check out the EnviroAtlas Interactive Map Tutorials: <https://www.epa.gov/enviroatlas/tutorials> and the EnviroAtlas Interactive Map: <https://www.epa.gov/enviroatlas/enviroatlas-interactive-map>

Procedure

1. Demonstrate in front of the whole class how to pull up a layer in EnviroAtlas.
2. Talk or review with students about the concept of **ecosystem services: providing the benefits that humans receive from nature**. Have students provide examples of ecosystem services and related human benefits.

*Examples of ecosystem services: trees provide oxygen which we breathe; trees provide shade on the playground (US EPA 2008); wetlands filter water (Vellidis et al., 2003); forests provide places for people to recreate (Kline et al., 2011).
Examples of human benefits: reductions in stress and anxiety from spending time at the beach (MacKerron & Mourato 2013); reduced symptoms of post-traumatic stress disorder after spending a weekend fly-fishing by the river (Vella et al., 2013).*



3. Guide students through the Webquest as they explore online. Please note that some of the vocabulary in the Interactive Map is at a high level.

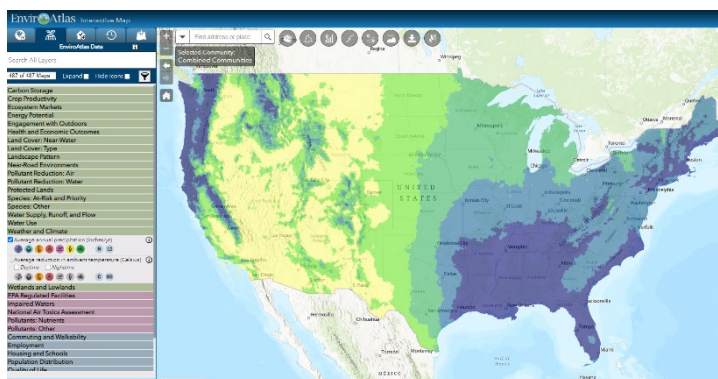


Figure 1. Screenshot of the Interactive Map from the EnviroAtlas Webquest. Image shows Average annual precipitation (inches/year).

4. **Evaluate:** Informal assessments can be made while monitoring student progress throughout the Webquest activity.

In addition, student understanding can be formally assessed by evaluating written responses in the Student Handouts.



Figure 2. 4th and 5th grade students zoom in on their school during the EnviroAtlas Webquest activity.



Figure 3. 4th and 5th grade students add a map layer during the EnviroAtlas Webquest activity.

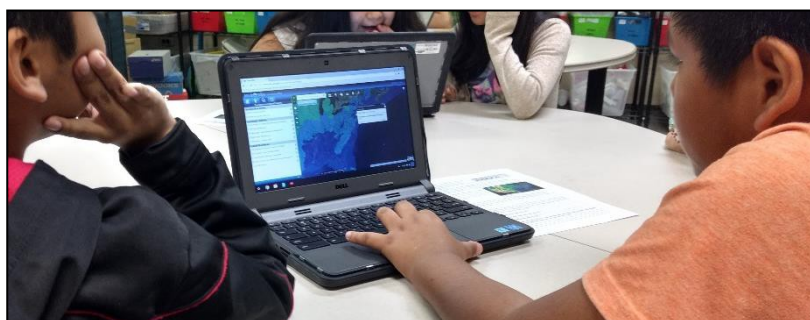


Figure 4. 4th and 5th grade students add EnviroAtlas map data layers while working on the EnviroAtlas Webquest activity.



EnviroAtlas Webquest

To be used by students as an online exploration of the EPA EnviroAtlas tool.

These materials are all part of EPA Report #: EPA/600/R-18/231.

Name(s): _____ Date: _____

A. Watch the **first minute** of the following EnviroAtlas YouTube video:
<https://www.youtube.com/watch?v=ZMU8ZLsCmUM> and answer the question below.

1. What are some benefits that ecosystems provide to humans? _____

- B.** Go to the EnviroAtlas Website:
<https://www.epa.gov/enviroatlas>
- C.** Scroll down and click on “EnviroAtlas Interactive Map.”
- D.** Click on the image of the map, as shown in Figure 1.
- E.** From the map opening screen, click on the button that says “Explore”.
- F.** In the search bar next to the magnifying glass where it says “Find address or place,” type in the name of your school, a comma, and the two letters for your State.
- G.** The map will zoom in to your school and have a little box that pops up that says, “Search Result.” It looks like the example in Figure 2 below. Click on the three dots.

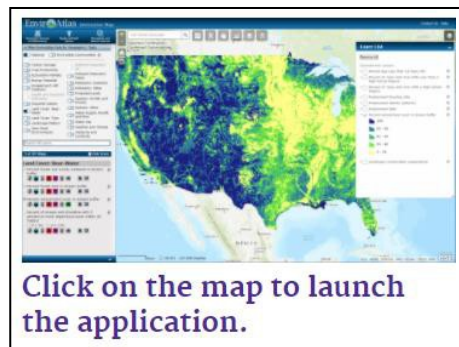


Figure 1: Screenshot of the map launch button.

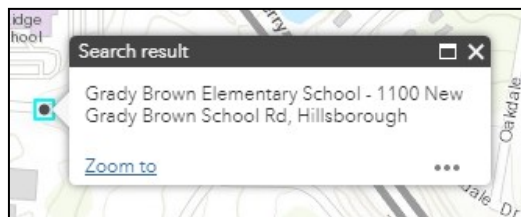


Figure 2: Screenshot of “Search result” box for selected school.

- H.** Click the + sign that says “Add a Marker.”
- I.** At the top of the map screen, click on the box that looks like 4 squares inside of a circle. This will let you change your basemap. Choose “Bing Maps Hybrid.” Click the x to close the menu.
- J.** Along the left side panel, select the “Weather and Climate” topic bar.
- K.** Click in the box next to where it says, “Average annual precipitation (inches/yr).”



- L. You will see the map appear and the “Layer List” pop up to the right. **Click** the name of the layer to show the Legend.
- M. **Zoom out** until you can see some differences across your State and the entire country.

Using the Map Legend, compare the area around your school to the rest of the State and country.

- 2. Does your school get more or less average annual precipitation (rain) than the rest of the country?

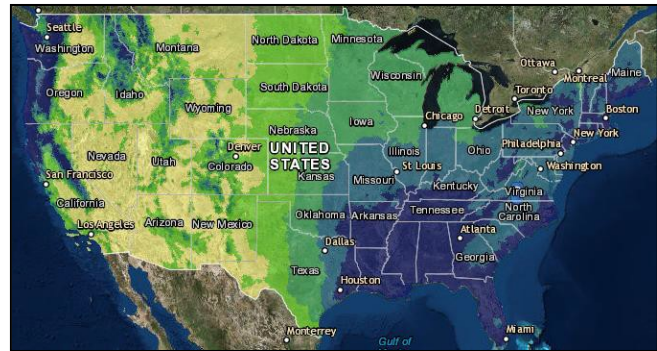


Figure 3: Screenshot of EnviroAtlas map layer with "Average annual precipitation."

- N. To read more about this map layer, **click on** the “i” on the left-hand side of the screen next to the name of the map layer. Optional: **Open and read** the Fact Sheet.
 - 3. **Write down** one interesting fact that you learned from either the short write-up or the Fact Sheet: _____

- O. To turn off the layer, go into the Layer List and uncheck the box next to the layer name.
- P. **Explore the map.** Find 2 other layers and record a few interesting facts about each one.

4. **Name of new Layer that you chose #1:** _____

5. **Interesting Fact about layer #1:** _____

6. **Name of new layer that you chose #2:** _____

7. **Interesting Fact about layer #2:** _____

8. **List anything else that you found and thought was interesting while exploring the map, especially if it relates to our current unit in class:** _____

