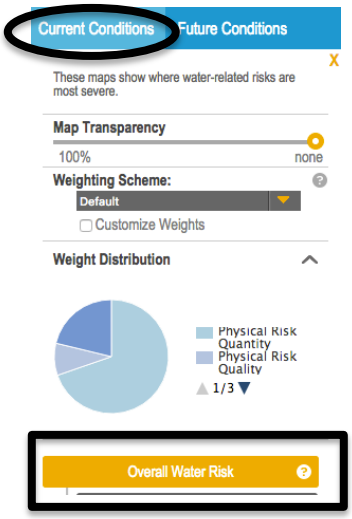
Water Risk Atlas Map Analysis Activity

Name_____
Hour_____

1. Go to http://tinyurl.com/hdu8fq6 to find the Aqueduct Water Risk Atlas. If the Atlas is loading slowly, an alternative is to use Screen Captures located here: http://tinyurl.com/gp8ytsx

2. Verify that the Current Conditions tab is highlighted at the top left of the map and that Overall Water Risk is highlighted in the Indicators box.



3. Begin by exploring the map and the map tools. Close the open windows on the map. To do this, click the X in the upper right hand corner of the Indicators box and the X in the upper right hand corner of the Legend box and click the - sign in front of Analyze Locations. Zoom out so that you can see the entire world.

4. Begin by pondering the first of the 3Ws: Where is it? (Where is the water risk?)

5. Describe using spatial vocabulary the regions of the world which have the greatest overall water risk and the regions of the world which have the least overall water risk. To help you, turn the Legend back on by clicking the Legend icon on the upper right side of the map.

   - World regions with greatest overall water risk:

   - World regions with least overall water risk:

6. Now the 2nd W: Why is it there?

   A. First, think about physical geography. How does water risk correspond to physical features? To analyze this, click on the Layers icon on the upper right side of the map. Select National Geographic. Close the Layers box.

      Now, open the Indicators box by clicking on the + sign in front of the word Indicators.

      Move the Map Transparency slider all the way to the left and then slowly to the right so that you can study the relationship between the Water Risk layer and the National Geographic map layer. Zoom in and out.

- How does high water risk correspond to physical features? (Be specific).

- How does low water risk correspond to physical features? (Be specific).

B. Next, consider the difference between “physical risk quantity” and “physical risk quality”.

- How would you explain the difference between the two?

In the Indicators box, highlight Physical Risk Quantity.

- Which world regions have the greatest physical risk quantity?

- Which world regions have the least physical risk quantity?

- List at least three reasons why you believe some world regions lack water *quantity*.

  1.

  2.

  3.

Now, highlight Physical Risk Quality.

- Which world regions have the greatest physical risk quality?

- Which world regions have the least physical risk quality?

- List at least three reasons why you believe some world regions lack water *quality*.

  1.

  2.

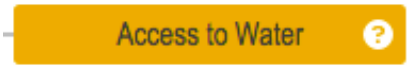
  3.

- List at least two reasons why you believe the *quantity* and *quality* map patterns differ.

  1.

  2.

7. Now, the 3rd W: What difference does it make?
   Highlight Access to Water. Open the Legend.



   - What does “access to water” actually measure? (See Legend.)

   - Which world region has the highest percentage of population without access to safe drinking water?

   - Which other world regions have serious problems with access to water?

   In the next step of this lesson, you will research the impacts of lack of access to safe drinking water in greater depth.

8. Changing Scale. Pan and zoom so that you are centered on the United States. Experiment with the options in the Indicators box including Overall Water Risk and your choice indicators under Physical Risk Quantity and Physical Risk Quality. Jot some notes below about water risk issues specific to the U.S. that you discover.

   - Major U.S. water risk issues include:

   - Which regions of the U.S. face the greatest water risk issues?

   List at least three reasons why you believe these U.S. water risk issues exist. Think about both physical and human geography.

   1.

   2.

   3.

9. Zoom back out to the global scale.

10. Future Conditions. Highlight the Future Conditions tab at the top left of the map. **Under Select a Time Frame, change the Water Stress In Year to 2040.**

    - Select Projected change in water stress. Which world regions are projected to have the greatest water stress in the future?

    - Select Projected change in water supply. Which world regions are projected to have a lower water supply in the future?

    List at least two reasons why you believe water supply in these regions will decrease:

    1.

    2.

    - Select Projected change in water demand. Which world regions are projected to have a higher water demand in the future?

    List at least two reasons why you believe water demands in these regions will increase:

    1.

    2.

    - Select Projected change in water stress again. Experiment with the Climate Change scenarios (Optimistic, Business As Usual and Pessimistic). Which world regions are projected to experience the greatest water stress related to climate change?

Be prepared to discuss your responses to this Water Risk Atlas Map Analysis Activity with the class.