



Using Topo Maps, Google Earth and Stream Quality Data to Compare Darby Creek to Olentangy River

1. Locate the OSU Wetland area and the portion of the Olentangy sampled on the topo map of the Columbus Northwest Quadrant.
2. What are the elevations of the area around the park?
3. What does the key show about the development of the area around the river where we sampled?
4. Locate the OSU Wetland Research Park in the Olentangy watershed using Google Earth.
5. Look at the area that is three miles up stream and 2 miles east and west. (South of Bethel Rd, east to a point where Karl Rd would be due east if it continued, and west to Tremont Rd.)
6. Go to a view that gives you about one square mile (eye alt 5280 ft). Use graph paper to grid out the amount of space that is green—probably easier in this case! Examine the entire area that we are interested in (see above) which would include about 12 sq. miles).
7. Approximately what percent of the area is covered by impervious surfaces (roads, roofs, or any other non-green space)? **
8. Locate the Batelle Darby Creek Metro Park on the “quadrant map.
9. What are the elevations of the area around the park?
10. What does the key show about the development of the area around the river where we sampled?
11. Locate Batelle Darby Creek Metro Park on Google Earth. Look at the area that is three miles upstream—bordered by National Rd. and two miles due east and west. Using the same grid technique as above (except this time looking at the part that is not green is probably easiest!), examine the 12 sq. miles that would impact the part of the stream where we were (confluence of Little Darby and Big Darby).
12. Approximately what percent of the area is covered by impervious surfaces (roads, roofs, or any other non-green space)? **
13. How far away is West Jefferson? What might they have there that could contribute to the degradation of water quality? Check lat. 39°55', long. 83°16'

Check these websites:

ga.water.usgs.gov/edu/impervious.html

and read The Impacts of Impervious Surfaces

<http://www.prep.unh.edu/resources/pdf/theimpactsof-nhep-04.pdf>



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What about agriculture?

<http://www.npr.org/blogs/thesalt/2013/07/09/199095108/Whats-In-The-Water-Searching-Midwest-Streams-For-Crop-Runoff>

Atrazine treatment with activated carbon

National Rivers and Streams Assessment

http://water.epa.gov/type/rsl/monitoring/riverssurvey/upload/NRSA200809_FactSheet_Report_508Compliant_130314.pdf

http://water.epa.gov/type/rsl/monitoring/riverssurvey/upload/NRSA0809_Report_Final_508Compliant_130228.pdf

Key Findings pp. xi-xiii

Chapter 3 pp. 17, 19-40 (32-53? on pdf)

Chapter 6 pp. 64-66

**This is another way to compare human impacts in each area of study.

Riparian disturbance

The closer harmful human activities are to a river or stream, the more impact they will have on it. The NRSA uses a direct measure of riparian human disturbance that tallies 11 specific forms of human activities and their proximity to the river or stream in 22 riparian plots along the water body. Examples of human disturbance include roads, pavement and cleared lots, buildings, pastures and rangeland, row crops, dams, and logging or mining operations. The same disturbance criteria were applied to define high, medium, and low riparian disturbance in streams and rivers nationwide. For example, a river or stream scored medium if one type of human influence was noted in at least one-third of the riparian plots, and scored high if one or more types of disturbance were observed at all of the plots.