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Professor Vick/Smith

LAND 2310

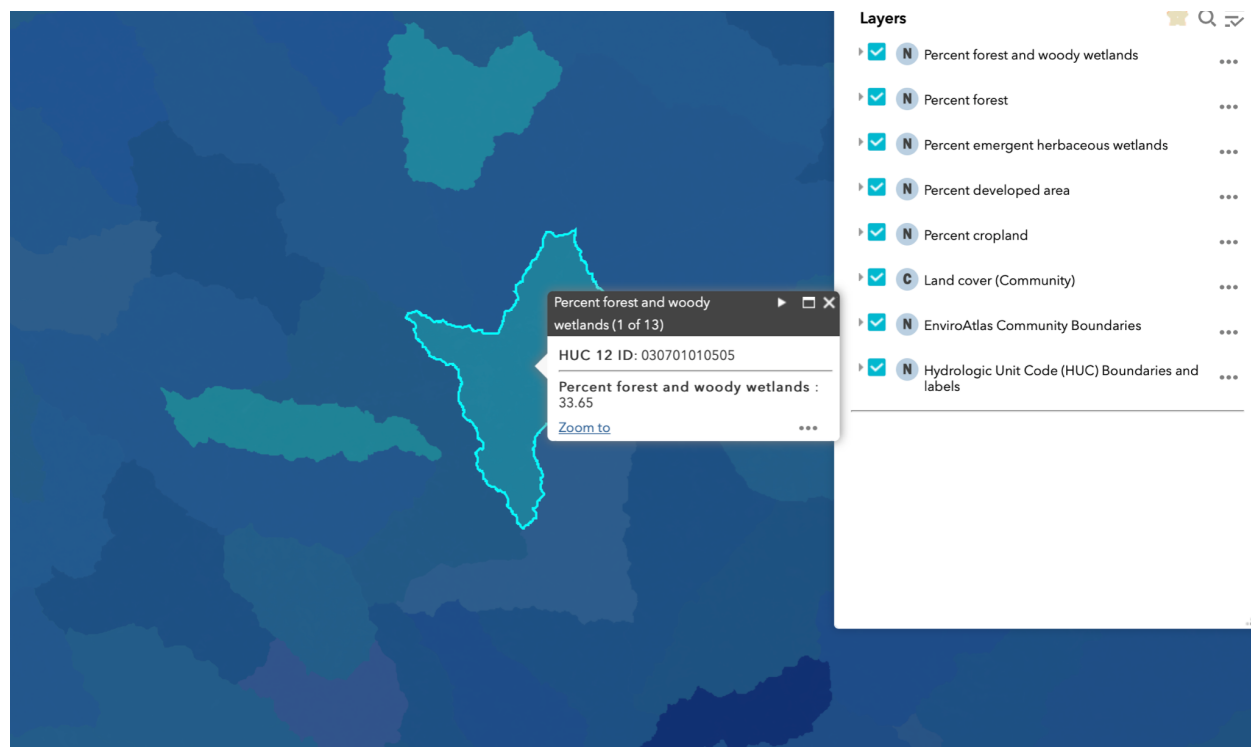
15 April 2021

Lab Assignment 3

(Chosen Location: 805 East Broad Street)

- 1. Identify the different land cover types within your watershed. The EnviroAtlas provides percent coverage for several land cover types. What is the impact on water resources of the land cover in your watershed? Include a map in your report.**

In this watershed, there are several land cover types. According to the EnviroAtlas website, there is 33.65% forest and woody wetlands, .16% wetlands, 55.03% developed land, and .61% cropland. Since the land cover type that dominates this watershed is developed land, this leads to an increase in stormwater runoff, which often leads to flooding, erosion, and stream channel alteration. There is also a high risk that man made pollutants are infiltrating the water resources in this watershed.



2. How does the watershed land cover compare with some of the surrounding watersheds? What are the similarities or differences? Why?

When comparing this watershed land cover to the surrounding area, we can see that nearby areas have a much higher percentage of woody wetlands and forest, and much less developed land. This is likely due to the presence of the university in this watershed, forcing urban developers to clear natural areas for development in order to accommodate for the high volume of individuals who inhabit the town. However, there is still a high presence of contaminants in the surrounding watersheds, likely due to the infiltration of contaminants from this watershed infiltrating into the surrounding areas, like a chain reaction.

3. Follow the instructions to generate a raindrop, and follow its path. How far does it travel to the receiving water body (stream, pond, etc)? What land covers does it travel through? Describe how that raindrop could be diluted by human activity along its path. Repeat this for a few locations that represent different locations in the watershed. Include a screenshot of one of the raindrop paths.

In proximity to my apartment complex, the average raindrop travels about .22 kilometers to the nearest watershed. This raindrop travels mainly through developed areas, and then into a forest land cover to the nearest body of water.

4. What is the receiving body of water for your watershed?

The receiving body of water for my watershed is the North Oconee River Greenway.

5. Assess potential sources of impairment.

- a. What conditions in the catchment might be detrimental to water quality in your watershed?**

- i. The main concern for maintaining a high quality of water in this watershed is impact from human activity. This watershed is heavily surrounded by a high density population, which causes storm water to flow faster and at a greater volume. This leads to frequent flooding, which destroys valuable habitats.

b. What sort of contaminants are likely to be present in your watershed?

- i. The contaminants that are likely to be present in this watershed are likely a result of human activity. Contaminants are often pollutants picked up from stormwater runoff, mostly from urban areas. There are likely contaminants from point-source pollution, such as industrial waste pouring into a river. There is likely also non-point source pollution, such as vehicular oil leakage, plastic contamination, fertilizers, detergents, etc.

c. What human behaviors are likely to impact pollutant loads? Perhaps different events, seasonal usage patterns, or other ideas?

- i. There are several ways in which human behaviors impact watersheds. For example, humans often improperly use their lawns, which stimulates algae blooms. Also, toxic chemicals often leak from storage tanks, spills, illegal activities, etc, which can kill off species and disrupt ecosystems. Furthermore, with continuous development, the land is often ripped/cleared, which leads to an increase in water pollution, alteration in community composition, and an increase in water temperatures.

6. What are some recommendations for improving water quality of runoff from your watershed?

- a. On an individual level, we can ensure that we do not dispose of toxic chemicals down our drains, implement drought-tolerant plants, adding pervious surfaces that allow water to soak up instead of runoff, etc. On a larger scale, governments and community leaders must implement policies that would reduce the volume of water runoff, which would in turn lead to a higher quality of water and would prevent or lessen floodings.