

City of Austin Watershed Protection Department

A watershed is all the land that drains into a given body of water. Small watersheds combine to become big watersheds, sometimes called basins. How we treat the land we live on has a direct impact not only on the streams and rivers that are in our immediate watershed, but also on the larger bodies of water that they flow into.

The goal of the City of Austin Watershed Department is to protect the lives, property, and environment of our community by reducing the impact of flood, erosion and water pollution. Austin is particularly vulnerable to these problems due to our erratic thunderstorms interspaced with very dry periods and a rocky landscape. There are multiple sections within the Watershed Department, each of which plays its part in accomplishing the goals laid out in the beginning of this paragraph. The divisions include environmental resource management, field operations, watershed engineering and watershed policy and planning (<http://www.austintexas.gov/department/watershed-protection>).

I worked in the field operations section, which maintained Austin's stormwater conveyance system, a network of creeks, engineered channels, pipes and stormwater ponds. By cleaning, inspecting, repairing and constructing drainage systems, this division helps to reduce flooding, erosion and water pollution. Specifically, I was charged with inspecting the network of stormwater ponds that hold excess stormwater after one of our torrential downpours. The ponds are manmade and collect much of the stormwater that runs down streets and into curb inlets. These ponds also have water quality monitoring devices, which are in place to measure the quality of rainwater, after it has run across the land.

If these devices detect an alarming amount of pollution, we need to know where this contaminated water came from. That is why we mapped the watershed, or the boundary of the land that drains into each pond. The watersheds were first mapped on a computer using a Geographic Information System application. We used ArcGIS. But these boundaries are never perfect. My job was to take the computer-produced maps of the each watershed and verify each of them in the field. This involved walking the boundary of the watersheds and adjusting them if necessary.

This job was allocated to me after a four-year hiatus. The Watershed Department's limited funding makes accomplishing their goals seem close to impossible. This task was put off because of a decrease in personnel, which placed it lower on the list of importance. I was able to put a dent in the large stack of unverified watersheds, which hopefully reignited interest in the important task.

Dr. Knoll's hydrology class gave me some practice in mapping watersheds. But mapping an undeveloped area, as opposed to a developed area, like downtown Austin, is a much more difficult task. Paved roads that slant right, then left, then right again along with a consistently changing landscape, due to construction, make it very difficult to tell where the water will flow after a storm. And even when you know the water will make it to a certain curb inlet, deciding where the drainage system will take the water is next to impossible without prior knowledge. Private property also poses a problem when walking the watershed boundaries. There were many times when the boundary ran through private property; here you must make your best guess or rely on the computer generated boundary lines. If any changes need to be made, I would make them on a separate file in ArcGIS, where my supervisor could see them.

Working in the Watershed Department showed me what abilities are most appreciated in the environmental conservation field. The other summer intern was a Ph.D. candidate, specializing in GIS. In addition, all full time employees that had been

recently hired were working extensively with GIS or other computer programs. Apart from the educational and policy work that was being done, extensive knowledge of GIS programs was required.

This was a daily reminder of something I already knew: I don't like computers. Even though only half of my time was spent doing rudimentary analysis on ArcGIS, I still couldn't stand sitting in front of a computer screen for hours at a time. This type of work is so important that I'm glad I tried it, but I don't think it is for me. A desire to work in the environmental field, coupled with a desire to stay away from computer programs, steered me into law school. Currently I'm a first year student at Texas Tech University School of Law. Here I plan on specializing in environmental law, especially as it pertains to water in Texas. I believe this degree will allow me to pursue a career in the environment without being a computer specialist. A law degree could take me in many different directions. I could work for a city, utility company or in the private sector in regulation or defense.

The Raoul stipend took me somewhere I wouldn't have been able to go without it. And my internship reminded me where I'd like my undergraduate degree to take me.