

FLOODPLAIN LARGE WOOD EFFECTS LARIMER COUNTY

PROJECT INTRODUCTION

As an Extension Intern, I helped conduct research related to ***the effects of floodplain large wood accumulations on soil geochemistry and plant density***. This research took place at Little Beaver Creek (LBC), a montane stream within the Cache la Poudre watershed. It compared the effects of floodplain logjams in burned and unburned river segments. The findings of this research will be used to better understand the value of floodplain logjams.

During this internship, I also had the opportunity to design and execute my own project that will serve as my Honor's Thesis.

My project focused on ***aquatic insect abundance and diversity among different substrates*** such as wood and cobbles in LBC. Aquatic macroinvertebrates play a vital role in freshwater ecosystems and can be used as biological indicators of stream ecosystem health.



Figure 1: Stonefly in tray with cobbles and tweezers

INTERNSHIP GOALS

My goals for this internship were to gain experience in the following:

- Field measurements of streams and large wood
- Soil sampling techniques and laboratory processes related to soil moisture and texture
- Topographic surveying
- Vegetation plot counts
- Developing a research project
- Aquatic insect sampling and identification

WHAT YOU DID

This internship involved both time in the field and the lab. The main tasks were:

- Collecting soil moisture samples regularly
- Processing the samples in the lab
- Analyzing soil texture via sieving
- Collecting larger samples to be sent to CSU Soil Laboratory for chemical analysis
- Conducting plant density surveys
- Collecting solar exposure measurements using a densiometer
- Conducting an aquatic macroinvertebrate survey on cobble and wood substrates
- Identifying aquatic insect specimens down to order in the field and further in the lab
- Collecting stream measurements such as width, depth, and discharge.

HOW DOES THIS APPLY TO YOUR EDUCATION

I am a student in the Warner College of Natural Resources studying ecosystem science and sustainability with a minor in watershed science. This internship provided an opportunity for me to apply what I have learned in my course work to multidisciplinary research and solidified my love of river science. My experiences this summer also helped me realize how much I enjoy the research process and want to pursue graduate studies.



Figure 2 & 3: Collecting Soil Samples at LBC

WHAT YOU LEARNED

Through this experience I learned about the processes that shape river systems and how they influence ecosystem characteristics and functions. I also learned a variety of field sampling and laboratory techniques related to soils, plant density, topographic surveying, and aquatic insects. This experience taught me that I enjoy engaging in all aspects of the research process, and that I want to pursue a career in science.

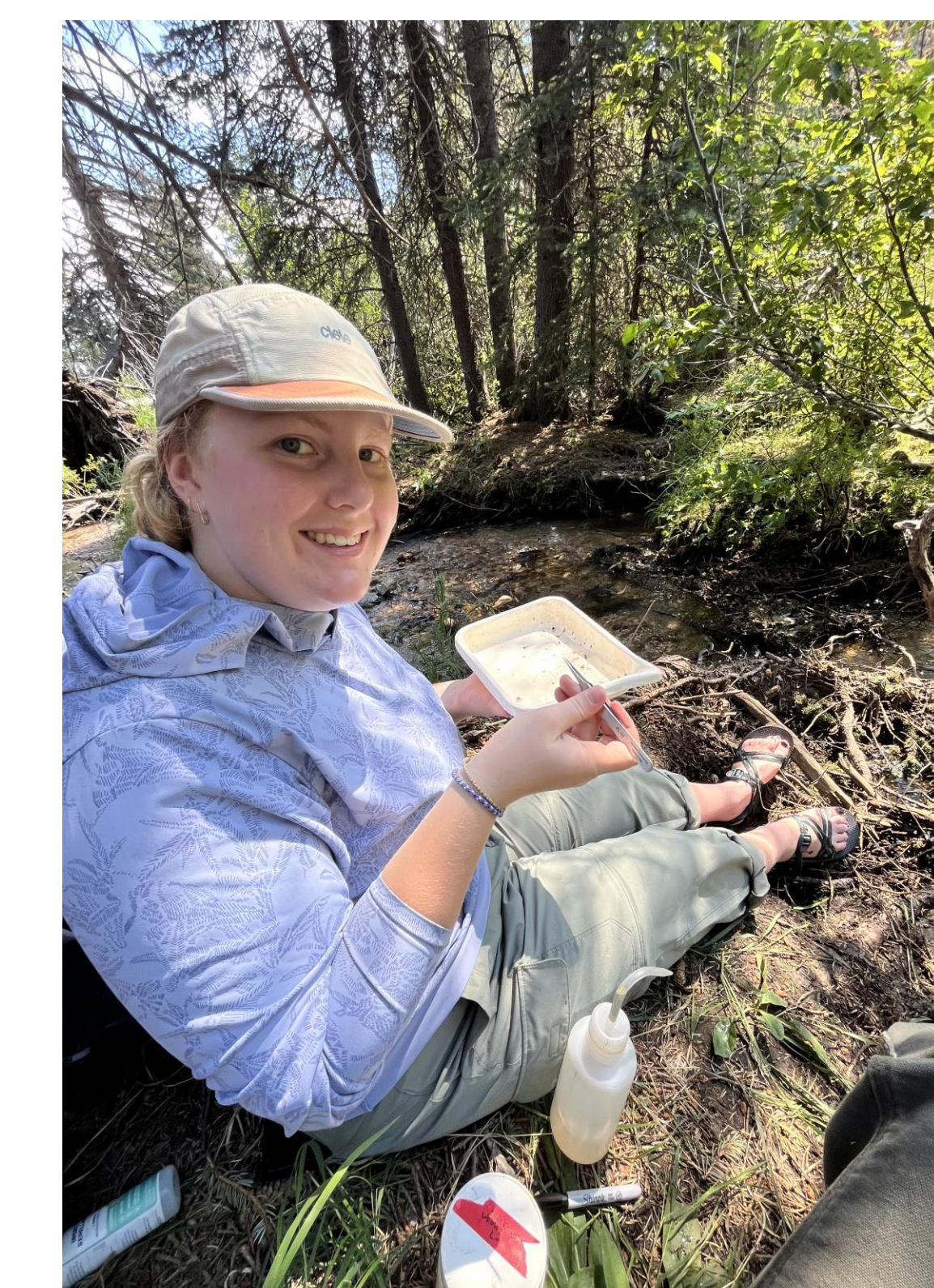


Figure 4 (left): Main channel of LBC, Figure 5 (right): Counting macroinvertebrate specimens

NEXT STEPS

The next steps for these projects are to analyze the data we collected in the field and compile and communicate the results. Looking forward, I plan to finish my undergraduate degree, further my education, and continue to gain experience and work towards a career in river science.