

SUI-activities at Lander University 2001-2002

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1. Lander Run

Over the course of the year we were able to involve several outside agencies and representatives of Lander University's physical plant to move the project closer to the envisioned construction phase. Lander University's Environmental Science Student Organization has adopted the upper 500 feet of Lander Run and performs semesterly trash pickups.

An environmental science major took on work on the project as part of Lander's Environmental Geology class. Student and faculty attended a workshop by Clemson University's extension service on Stream Restoration using Natural Channel Design in September. During this meeting we made several contacts that proved helpful in the further study of the stream. During discussions with the Lander engineer we came to understand that structural integrity of the parking areas and aesthetics were the main concerns that were of concern. The student subsequently attended another conference on stream restoration at North Carolina State University in October.

A geomorphologist from EPA's Region IV office, Tony Able, visited the site in late October, presented a guest lecture to approximately 20 students and additional visitors, and assisted the student and Lander Faculty with surveying. Following the guest lecture on 10/22/01, a first meeting with representatives of Lander's physical plant, the Greenwood NRCS office, and the district office of SCDNR took place. During this meeting, we could reach preliminary agreement on trying out some natural channel design tools before resorting to more traditional engineered structures.

During November, student and fellow installed a stream gauge and completed the surveying of an additional cross section of the stream. Scheduling conflicts and family health problems of the student precluded much further work during the end of 2001 and early 2002.

During the course of a Biology Major's special project on the microbiological health of the neighboring Rocky Creek, several samples at the upper end of Lander Run had shown high counts of microorganisms indicative of fecal contamination. In January Lander's Biodiversity class took water samples from the top 4000 feet of Lander Run and found also high levels of fecal coliforms. In a second set of samples taken in February and analyzed by Clemson University's Water Resources Microbiology Laboratory, these high values well above the EPA standard for wading were again confirmed. This indicates that Lander Run is not only impacted by an erosion problem but also by yet to be identified microbiological contamination, possibly through sewage.

In March, the SUI fellow attended another workshop at Clemson that presented the stream assessment techniques in more detail. In April, the Greenwood NRCS office initiated another meeting, with representatives of Lander University's physical plant and the SUI fellow, this time including a NRCS technical specialist on stream restoration. The discussion resulted in a couple

of concrete ideas for restoration actions, and an offer by NRCS to assist with hydraulic dimensioning and the creation of a topographic site map to be used for the construction design.

In the window of time between end of regular classes and begin of summer school, two Environmental Science students and the SUI fellow were able to work several days on the surveying of cross sections and stream assessment. Coincidentally, a significant rainfall event occurred just before the surveying, which provided ample illustrations of the erosion problems present and allowed for easier identification of several parameters of interest. One Environmental Science student began an inventory of wetland species present in the stream channel. The SUI fellow attended a workshop at Clemson University with a focus on restoration design during the week of 05/20-05/25. During June, NRCS surveyed the Lander Run area, and the SUI fellow completed a project report summarizing the surveys performed by Lander University. These data will provide a good foundation for a more detailed design of the stream restoration in cooperation with NRCS, Lander University's engineer, Environmental Science students, and the incoming faculty replacing the SUI fellow. After getting the necessary permits, Lander University will then be able to finally implement actual construction. Within this topical area, the SUI grant paid for some surveying supplies and registration fees.

2. GIS and watershed planning

A group of Lander University computer science students chose as their special project topic to review available GIS software systems. Confirmed by the recommendations of this group, Lander purchased with SUI grant money 25 academic licenses for ARCVIEW and Spatial Analyst. The course ES 302, "Introduction to Environmental Science 2" incorporated this GIS software, including some exercises on the distribution of population growth and population groups in South Carolina. This software was also useful for the compilation of the project report for the Lander Run project.

On April 15, 2002, Professor Steve Klaine from Clemson University visited Lander University and gave a lecture on "Biocomplexity and the Environment". His travel costs were paid for by the SUI-grant. In addition, five Lander faculty and Klaine sketched out a common understanding of how Lander could participate in the Reedy/Saluda watershed efforts currently underway and planned as part of a grant proposal to the Rasmussen foundation.

3. Other

The SUI fellow and two students of ES301 "Introduction to Environmental Science 1" attended the 10th South Carolina Environmental Symposium on 10/4/02 to learn more about industry perspectives on sustainability.

On 01/30/02 the SUI fellow attended the halfway-conference of the Sustainable Universities Initiative and presented a poster with some of the results of the Lander Run project.

In the spring of 2002, the course ES302 "Introduction to Environmental Science 2" incorporated material related to epidemiology and environmental health from the modules developed by SCAHEC with funding from SUI.