



University of Virginia, Virginia Coast Reserve Schoolyard LTER Program



Educational Activities at Northampton High School

GPS Classes

GPS has become an integral part of environmental research. The advent of the GPS unit has allowed for increased spatial resolution and increased usefulness of environmental data. For this reason, students are taught the uses of the GPS as a first step to scientific research. Each semester GPS sessions are held in the science classes for the various grade levels, to teach them the use of the GPS. Students are encouraged to learn by having to enter coordinates to a bag of candy into the GPS unit, and then having to go find it.



Phillip Smith and Jason Restein teach entering latitudes and longitudes into handheld GPS units

Biomass/Plant Taxonomy Classes

Biomass research is one of the core data sets for the VCR LTER. In the spring of 2002 it was brought into the SLTER program as a way for students to learn plant taxonomy, as well as the process behind this type of research. During the weeks from February 4th to March 8th Environmental Science II students were brought to the lab and taught the principles of biomass research by Jason Restein. In return, they aided Jason in his sorting of the plant material collected at each of the biomass sites. Students learned how to identify certain marsh plants and divide them up for analysis.



Water Quality Classes

Water Quality research was one of the first programs to be introduced to the students for the SLTER. In the summer of 2001 two interns were hired from the high school to locate and test public access water sites up and down the Eastern Shore. Their work was continued in the fall of 2001 and spring of 2002, as students from the high school were each assigned 3 sites to test on a bi-weekly basis. These students are guided throughout each semester by Kathleen Overman and their teachers. Students collect data on water clarity, water depth, tide stage (if tidal), nitrate, phosphate, ammonia, pH, dissolved oxygen, conductivity, and temperature. Students also collect atmospheric data for the day they do their tests. While students learn about the water chemistry around their area, LTER receives a viable data set with which to base further studies within the water-shed's up and down the Eastern Shore. The students involved in this research are 11th and 12th graders. Some students also get the chance to present their work at scientific meetings. Shana Francis (right), Will Weaver, and John Watson presented their work at the Spring 2002 All Scientists Meeting in Charlottesville, VA at UVA.

Other projects include the set-up of a water chemistry experiment with Mr. Bonniwell's 9th grade Environmental Science class. During this experiment students are exposed to how plants, fish, and fertilizers can affect water chemistry. The class is visited on a daily basis for the week of the experiment by Kathleen who shows the students how to use the testing equipment and teaches them how each of the variables affect water chemistry.



Diagram of the sites tested by the students.



Important Note

In the spring of 2002, Northampton County High School set up a class called "Environmental Science II" to specifically deal with SLTER related research and teachings. This class is currently taught by Tom Bonniwell and Kevin McManus of NHS.

Educational Activities at Northampton Middle School

GPS Classes

On February 19, 2002, Phillip Smith went to one of the 8th grade classes to show GPS use to the class. Students were able to pick up satellites in the classroom and see their location at school. This will be repeated for all of the 8th grade classes this semester.



Water Quality Classes

On February 17 and 19, 2002, Kathleen Overman went to two of the 6th grade classes to introduce them to water chemistry. This was done by having the students run simple tests on water from a swamp, lake, and agricultural pond.

** All of the programs are currently evaluated by Dr. Bruce Hayden, Dr. Dave Smith, Randy Carlson, and the teachers at the schools that are involved with the activities. The programs are designed to facilitate not only increased education for the students, but also provide data to the VCR LTER.

** It is an incredible feeling to be able to see these students excited about their environment and about what they learn with this program.