Ecological Education in the Coweeta LTER Program:
Supplement to Grant DEB-96-32854

Submitted to National Science Foundation on 28 January 2000
Edited 22 January 2001

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I. Results from 1999-2000 Supplemental Support

A. Schoolyard Activities

During the 1999-2000 school year we continued Coweeta Schoolyard LTER activities initiated in August 1998. We involved teachers and students at three grade levels: 6th grade at Macon County Middle School (Franklin, NC), high school at Rabun Gap Nacoochee College Preparatory School (Rabun Gap, GA), and college at Southwestern Community College (Sylva, NC). We selected this range of grade levels to conduct projects and investigate the potential success across a wide range of teachers, students, and facilities.

Our experiences have continued to be quite positive. All five teachers involved (3 at 6th grade, 1 at high school, and 1 at community college) gave positive reviews of the activities and had overwhelmingly positive responses from the students involved. A summary of the people involved included 5 teachers, 5 research staff members, and 46 students. A variety of material is available online at the following URL address that lists the people involved, a summary of project experiences, as well as photos of some of the field days. This link can also be accessed by clicking on “Education” on the Coweeta home page (http://coweeta.ecology.uga.edu).

http://coweeta.ecology.uga.edu/webdocs/school/

The projects, ranging from stream water and fish sampling, to riparian plant quantification, to tree growth and stem respiration measurement, taught instructors and students a wide range of field techniques and equipment operation. Instructors have used these experiences to take what they have learned to initiate other projects on their school properties including an extensive vegetation regrowth study in a riparian restoration project at Rabun Gap Nacoochee Preparatory School and a stream health monitoring program at Macon Middle School.

Two representatives from the Coweeta Schoolyard LTER program (Brian Kloeppel and Terry Seehorn) also participated in the second LTER Network Education Workshop in November 1999 held at Kellogg Biological Station nar Hickory Corners, MI. It was refreshing to participate in a workshop that generated so many ideas and potential collaborative projects. Many participants were also relieved to see that other LTER sites had similar challenges and funding limitations to initiating and maintaining educational programs. As a result of this workshop, we are planning to submit an informal education proposal to NSF to fund an additional person and educational activities at Coweeta.

II. Introduction to 2000-2001 Supplemental Support

As a means of public outreach, the Coweeta LTER Program and USDA Forest Service scientists and staff conduct numerous educational and guided scientific tours for various user groups including primary, secondary, and college education classes, visiting scientists, forest and watershed managers, and other user groups. Currently, over 1300 visitors per year are provided guided tours by the scientific staff at Coweeta.

The Schoolyard LTER initiative has allowed us to focus some much needed attention on educational and curriculum improvements needed in the science classroom. Specific proposed activities are described below.

III. Proposed 2000-2001 Projects and Activities

A. Schoolyard Activities

We request funding for instructor stipends and supplies to include five instructors and approximately 50 students in ongoing and new projects for the Coweeta Schoolyard LTER initiative. We will be building on the five instructors and 45 students who participated in the 1999-2000 activities. The proposed participation is the maximum that the current level of funding will allow, given the research staff and instructor participation time, travel logistics from area schools, and student/parental support of weekend/evening activities. We hope that a successful proposal to be submitted to the NSF Informal Education Program will allow additional activities.

Instructional presentations for field activities will take place at the teacher's institution and field work will be conducted at school property study areas, Coweeta Hydrologic Laboratory, and surrounding southern Appalachian study sites. Data summary and discussions will take place at both Coweeta as well as at the teacher's/student's home institution. Data will be archived where appropriate and a summary of the student projects will be placed on the Coweeta web page (URL Address http://coweeta.ecology.uga.edu/) for the current students and hopefully for future Schoolyard LTER groups to view and use.

The first student group wishing to continue Schoolyard activities is composed of the 6th grade science classes in nearby Macon County, NC Middle School. Over 200 students in these science classes have benefited from classroom discussions by visiting research staff on specific research projects and the importance of long-term ecological research. The instructors, Michelle Gossett, Mark Guy, and Michele Hubbs, have been extremely supportive of the 16 students from these classes who won an essay contest to participate in field research experiences. These students have functioned as class leaders when covering topics in curricula units that they learned about in the field.

If funded, we will likely continue most of the activities that were/are conducted/scheduled. These activities include: riparian plant coverage on control and restored stream banks, forest litter collection and sorting across a gradient of forest types, weather patterns and climate recording, tree growth and respiration, stream health and fish shocking, internet availability of ecological data, and field tours of the local water treatment and sewage treatment plants. Each of these field days will be preceded by a classroom presentation on the research and field techniques and will be proceeded by a group discussion of what they learned. The eight field trips will be conducted on Saturdays during the school year.

The second group wishing to continue Schoolyard LTER activities is the high school environmental science class at Rabun Gap Nacoochee School in Rabun Gap, GA. Their instructor, Terry Seehorn, has been heavily involved in a number of student research projects that he has helped to initiate on school property. Small class sizes have also enabled all students to participate in the field studies without problems due to the "bigfoot" researcher effect caused by extensive site disturbance. Studies on stream turbidity, riparian restoration, and vegetation regrowth following disturbance have been extremely exciting and productive for students.

The third group wishing to continue Schoolyard LTER activities are the freshmen college level biology and chemistry classes taught by Deanne Oppermann at Southwestern Community College (SCC) in nearby Sylva, NC. Some of our research scientists have guest lectured for the Biology and Chemistry classes at SCC in the past and the students have demonstrated high interest in environmental research. The students expressed interest in participating in carbon flux measurements from forest trees. This would be an interesting topic for the Biology class to study the forest carbon cycle components and would be interesting to the Chemistry class to study the use of infrared gas analyzer techniques in environmental research.