

PIEDMONT IMPRESSIONS AND IMPACT

Steve Baker
Summer 2003

As an ecologist, I welcome the opportunity to interact with colleagues from any discipline that share my interest in and concern for the environment. I was excited when Dr. Eloise Carter recommended that I apply to attend the 2003 Piedmont Project, because she has spoken highly of the program. Also, I had some previous experience with the program as I had led the aquatic biology activity that was held in the fall workshop at Oxford on at least one occasion.

I found the workshop stimulating and interesting. Although I had already been exposed to much of the material, it was very enlightening to listen and interact with my colleagues, many of whom were not in science disciplines, respond to issues of sustainability, urban growth, and basic Piedmont Ecology.

I have worked this summer in planning to incorporate some issues of environmental health into my classes as a byproduct of the workshop. I intended to add this course material to Biology 120, my non-majors course, but since I will not teach it until spring of 2005 I decided to go ahead and add a unit to my freshwater ecology class in the fall. I normally teach a long segment on water quality chemistry which is somewhat useful but also quite boring in this course. I am working on reducing the content of this material and instead addressing diseases and problems that can occur as a result of poor water quality (see attached syllabus).

I was particularly interested by the topic of sustainable development as a process of trade offs. I am used to thinking purely of the ecology component of environmental issues. The comments made by Peggy Bartlett concerning the intersection of the biology, economics, and social aspects of development were interesting and a component I often forget. I particularly plan to add this as a component to my unit on water and environmental health.

I appreciate the effort put in by the presenters of the Project and found it very interesting and helpful.

Proposed Lecture Syllabus and Class Information *Biology 245* *Fall, 2003*

Instructor: Dr. Steve Baker
Pierce 117

COURSE OBJECTIVES:

1. Students will acquire a basic knowledge of freshwater ecological principles in stream, lake, and wetland ecosystems.
2. Students will learn the skills and techniques needed to identify most aquatic invertebrates to the taxonomic level of genus.

3. Students will learn techniques for evaluating water quality of streams and lakes based on the evaluation of the pollution tolerances of the organisms they contain.
4. Students will put their new knowledge to work by practical, hands-on field investigations of nearby lakes and streams.
5. Students will learn research skills needed to conduct scientific investigations, develop critical thinking skills used to evaluate their data, and present their results to the class.

COURSE SYLLABUS:

This syllabus is tentative and subject to change due to weather or other needs.

<u>Date</u>	<u>Topic</u>
8/28	Course Introduction
9/2	Introduction to Taxonomy-- The role of M and M's in Biology
9/4	Aquatic Ecology Case Study
9/9	Presentations: Student Groups Intro to stream water chemistry
9/11	Water and your health... what's happening in your neighborhood?
9/16	Water and Disease
9/18	Introduction to Biomonitoring and Sampling Design Rapid Bioassessment Protocols
9/23	Introduction to Stream Ecology-Design a stream Geomorphology Temperature and Light Influences Stream channel characteristics Riparian Zones
9/25	Life at the Bottom - role of benthos in stream ecosystems Habitat adaptations-Benthic movements
9/30	Energy Flow: River Continuum Concept
10/2	Student Presentations : Major Insect Orders

10/7	Student Presentations
10/9	Stream Fishes
10/21	Exam I – through stream fishes
10/23	Introduction to Lake Ecology-- Classification Temperature and Stability Water Quality
10/28	Plankton
10/30	Bear Creek, Quantitative Sampling / Fish Collection
11/4	Aquatic Macrophytes, Lentic Insects and Fishes
11/6	Wetland Ecology
11/11	Introduction to Aquaculture
11/13	Trip to Buford Fish Hatchery
11/14	Introduction to Fisheries Management/Farm Ponds
11/18	Exam 2
11/20	Student Project Presentations: 2003 Freshwater Ecology Symposium
11/25	Human Impacts: What's happening to Freddy?
11/26-11/28	Thanksgiving Holiday
12/2	Human Impacts:
12/4	Endangered and Exotic Species
12/9	Course wrap-up