

**Evaluation of ecosystem services as the objective of field and laboratory activities to be added to an introductory course in Environmental Sciences**

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## Summary

### 1. Original Goals

To develop field and laboratory activities to complement the Introduction to Environmental Sciences (ES) course at Rhodes College, in order to provide a hands-on experience to non-science majors.

### 2. Achievement of goals

a. During the spring 2006, Rhodes student Adam Bohnert, and I worked on data collection and analysis of the vegetation at Overton Park. Together we selected vegetation plots, created a GIS map containing information such as basal areas and species diversity, and we made a preliminary assessment of the economic value of carbon storage and sequestration.

b. We achieved three goals:

- i. We collected some basic useful information to design the laboratories for the Fall 2006 Environmental Science course (see attached file “*Fall06 Laboratory Syll*”)
- ii. Based on the preliminary field work, we select which “ecosystem service” to investigate during the semester.
- iii. We presented the results of our work at the Ecological Society of America 2006 annual meeting in Memphis, TN. The title of the poster was: *Valuation of Ecosystem Services of Overton Park, Memphis, TN*

### 3. Application and results of the planned laboratory experiences during the fall semester 2006.

a. Overall these experimental laboratories went really well. The theme of “Evaluation the ecosystem services” of Overton Park allowed us to integrate different activities into a semester-long effort in the discovery of a forest’s role and value. I think this turned out to be the main strength of these laboratories: I often brought up this theme in the lectures, in the discussions, and in writing the assignments.

- b. Most students found the scientific process of collecting data, analyzing them, and writing a lab report very challenging. However, over the course of the semester their assignments improved greatly and by the end some of their reports reflected their progress in thinking more “scientifically”.

I have attached to this report the following files:

- i. Two examples of laboratory’s exercises (“*ES First lab*” and “*ES Fourth lab*”).
  - ii. An examples of guidelines for writing lab reports (“*Lab RepGuidelines*”).
  - iii. Two examples of students’ lab reports (“*Huddleston*” and “*Saba*”). The quality of the attached reports provides an assessment of the type of students’ work and the outcome from the laboratories. Again, it should be kept in mind that these reports were written by non-science major students, who had a minimal or no experience with science-based exercises.
  - iv. An assessment of the laboratory by the teaching assistant, Adam Bohnert (“*ES Bohnert Review*”).
- 4.** At the Ecological Society of America meeting, I participated in an interesting workshop “Addressing environmental problems to stimulate undergraduate learning.” Based on my observations of the success of this workshop, I am planning to attend the ESA 2007 meeting in San Jose, California, and participate in one of their teaching workshops.

**5.** Financial statement:

a. Original budget

i. Undergraduate intern.	\$400.00
ii. Field Equipment	\$500.00
iii. Consultant for website	\$375.00
iv. Stipend to Faculty	\$2,000.00
v. Total:	\$3,275.00

b. Expenditures

i. Intern	\$400.00
ii. Stipend to Faculty	\$2,153.00
iii. Field equipment	\$307.00
iv. Workshop ESA 2007	\$415.00
v. Total	\$3,275.00

**6.** I grant permission to the ACS to post my original proposal and the result of my work on the ACS Science Reform website.

Sincerely,

Rosanna Cappellato