The initial impetus which resulted in formation of the environmental studies (ES) program at Kearney State College was the appearance on our campus of Dr. LaMont Cole of Cornell University. He spoke at our annual Midwest Conference on World Affairs in April, 1970. His presentations stimulated a small group of Kearney State students and faculty to form an ad hoc group to discuss environmental problems. This interest soon resulted in the formation of a city-wide ecology club and also in a faculty committee to consider development of environmental education at Kearney State.

In the fall of 1970, the ES group sent a memo to all departments on campus, asking if they would be interested in participating in an ES program, with existing courses, in development of new courses, or having a faculty representative on the ES committee. The first meeting of what was to become the official ES committee was held in October 1970, with representatives from the following departments: biology, chemistry, economics, geography, history, physics and psychology. Art, English, mathematics and sociology were later added to the committee, although mathematics has since dropped out.

During the winter of 1970-71, the committee spent much time writing a philosophy, rationale, objectives and developing a curriculum for the program. The objectives adopted are given in Table 1. Our concept of the program from the start was that it should be interdisciplinary in nature:

"The general philosophy of the committee is that environmental problems are very complex and thus best approached from an interdisciplinary concept. As pointed out in the rationale, environmental problems require efforts involving the commitment of a wide range of disciplines since neither the problems nor the solutions can be identified in any simplistic manner. Analysis of a specific problem, for example, might well be a technical matter, but attitudes and solutions most often include economic, social, cultural, historical and political ramifications. That we are today experiencing environmental difficulties is apparent; that we need trained technicians and experts and an alert citizenry is equally apparent. It is with these points in mind that the committee made its recommendations for the program development. We desire to provide sufficient initial training to assist our students in understanding some of the problems which confront our environment; to provide sufficient background to enable our graduates to enter careers in environmental science; and to develop an awareness among our students as to their personal responsibility to the environment. To accomplish our stated objectives, we felt we must approach our program in Environmental Studies from a multi-disciplinary approach."

Although we eventually planned to develop the program into a major program, we determined the best course of initial action was to develop a minor program which would not require significant funding.

The committee developed a core curriculum, consisting of five new courses and an existing conservation course (Table 2). The six core courses, plus four elective hours, were to be taken by ES minors. The courses were all non-prerequisite courses so that a student with any major could minor in ES.
Table 1. OBJECTIVES OF THE ENVIRONMENTAL STUDIES PROGRAM

Educational Objectives

1. To provide courses in environmental studies which assist the students in their understanding of the problems which confront our environment and their effects on society.
2. To provide a program of study for the student who desires a career in the area of environmental science.
3. To try to develop an awareness among our students as to their personal responsibility to the environment, with courses which explore the economic, historical, political, psychological and sociological aspects of the relationship of man to environmental problems.
4. To promote among students, faculty and personnel interested in and engaged in environmental work, the systematic and scientific study of environmental problems.

Service Objectives

1. To act as a clearing house for information on Environmental Studies. The information provided would eventually include: audio-visual materials (slides and films), training of staff members, library materials (books, periodicals, reports), consultant services, and laboratory services.
2. To provide information on environmental problems to the community of Central Nebraska through the development of programs such as: seminars, visiting lecturers, evening courses, and institutes.
3. To cooperate with other organizations interested in environmental work.
4. To provide Central Nebraska with expertise to assist the correction of environmental difficulties germane to our particular geographic area.

Research Objective

To promote basic and applied research by students and faculty on environmental problems in Central Nebraska.

Table 2. ENVIRONMENTAL STUDIES CURRICULUM

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 305</td>
<td>Aesthetics in the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Economics 420</td>
<td>Environmental Economics</td>
<td>3</td>
</tr>
<tr>
<td>Environmental Studies 310</td>
<td>Biological Effects &amp; Chemistry of Pollutants</td>
<td>4</td>
</tr>
<tr>
<td>Geography 305</td>
<td>Environmental Conservation</td>
<td>3</td>
</tr>
<tr>
<td>Physical Science 300</td>
<td>Physics of Environmental Problems</td>
<td>4</td>
</tr>
<tr>
<td>Social Science 333 and English</td>
<td>Environment in American Life and Thought</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses

(Four hours to be selected from a wide variety of courses in seven departments).
Three of the core courses were team-taught: ES 310 by faculty from chemistry and biology, Physical Science 300 by physics and biology and Social Science and English 333 by English and history faculty. The other core courses also utilized guest resource personnel frequently. Of the electives, Human Ecology has proven to be most popular and Special Topics in ES has been very useful in presenting material more specific than that in the core courses (e.g., analysis of water quality in Wood River). The first ES core courses were offered in spring of 1972. We began with 16 declared ES minors. By 1973, we had 34; in 1974, 49; and we presently have 45 minors. Interest in ES at Kearney State seems to have leveled off.

ES courses have averaged 25 students, with roughly half being ES minors. Environmental Conservation and Environmental Economics have been the most popular core courses, drawing around 40 students each time they are offered. Physics of Environmental Problems and Biological Effects and Chemistry of Pollutants have attracted the fewest students, averaging only about 15 per course offering.

Fifty-five percent of ES minors have been biology majors. Although a student with any major may choose an ES minor, geography majors constitute our second largest pool, with the rest coming from accounting, art, business administration, chemistry, industrial education, mathematics, physics, political science, psychology, recreation and sociology.

The ES committee has remained the administrative body for the program. Three hours released time are granted the director, and no faculty are assigned to the program. Faculty are loaned for whatever time necessary to teach ES courses offered each semester, and student and faculty time is donated for committee work.

The ES committee has spent much of its time the past three years in reviewing the progress and success of the program. Several attempts have been made to develop a major program, because students desired a more career-oriented curriculum and program. All attempts to develop an ES major have been voted down by the committee. They desired to maintain the program at minor status. The biology department has recently developed an Environmental Manager option which will give Kearney State students a career-oriented program.

Several problems have hampered the total success of the program. The problem which occurs repeatedly is that of lack of financial support. Unfortunately, we do not have many ES faculty trained in interdisciplinary studies. Lacking interdisciplinarians, another approach is to team-teach the ES courses, thus making them more interdisciplinary. Unfortunately, Kearney State, as are most state supported schools, is funded on the basis of student credit hours produced. Team-teaching thus becomes infeasible, unless class sizes are exceptionally large. Large class size, however, does not allow discussion courses to operate very successfully.

Many of the ES faculty at Kearney State feel that ES, unlike much traditional education, should be a socially relevant and active experience with students becoming involved in a local and regional issues. ES education requires much faculty leadership or many problems can ensue. Substantial funding would be required for equipment, supplies, travel and low student/faculty ratio to make the problem-oriented approach successful.

Another problem has been the uncomfortable feeling of some faculty and students in dealing with a course which does not pretend to have most of the answers. Criticism has been directed at some ES courses, because they are not primarily fact or concept-oriented, but rather are issue-oriented.
One of the most perplexing problems in the ES science courses arises from the greatly different backgrounds of the students. Non-science majors have been extremely reluctant to take the required ES science core courses. These courses were designed so that no previous background was essential, but when most of the students in the course are science majors (90%), it is disturbing to bore the majority so that the minority can keep up. An alternate curriculum, which might be a solution to the problem, would be to have the student take blocks of courses from two of three of the following areas: (1) humanities, (2) social sciences, and (3) natural and physical sciences, with a student omitting the courses in the area where he or she is majoring. The problem became so serious that we dropped ES 310, Biological Effects and Chemistry of Pollutants and the ES minor now selects four hours from the biology or chemistry electives. The chemistry department has recently added five hours of mini-courses to the ES elective list.

Although the problems have probably outweighed the successes to date, we have survived for three years and have offered at least three ES courses each semester. Thus, environmental courses are available to Kearney State students on a regular basis. ES is also a significant program at Kearney State in that it is the only program which attempts to be truly interdisciplinary in nature.

In addition to the regular course offerings, the ES program has sponsored several speakers, workshops, seminars, institutes and evening courses. We have developed an information center which provides objective data about environmental issues for south-central Nebraska. We have done research on local environmental problems, both through individual faculty and student efforts and as class projects. One highlight of the program was an ES 499 class planning and helping to initiate a recycling center in Kearney.

We are gradually developing a more well-rounded curriculum, having added courses in Environmental Psychology, Introduction to Environmental Studies, and Politics of Energy and the Environment.

In summary, the ES program at Kearney State, in spite of organizational problems, has helped to make students and faculty more environmentally conscious and has broadened the outlook of all persons involved in the program.

* * * * *

CAREERS IN BIOLOGY, A MINICOURSE

A summarization of a paper presented to the March 21-22 adjourn meeting of the AMCBT at Kearney State College

John F. Hertner, Asst. Prof. of Biology
Kearney State College, Kearney, NB 68847

All too often students enter an academic program without any insight into the career opportunities the program may or may not lead to. To fill this need, the biology faculty at Kearney State College added an "Opportunities in Biology" minicourse to our schedule. The class met twice a week for five weeks and offered one semester hour credit.

Four goals or purposes for the minicourse were established:

1. The course should focus the student's attention on career awareness.

2. The course should provide an opportunity to develop skills in information gathering. (To meet this goal, the students spent two sessions in the college library searching out occupation handbooks, employment guidelines,