



PROGRAM HISTORY

EVERGREEN ENVIRONMENT ■■

1972-73

A.M. Wiedemann

PROGRAM HISTORY
EVERGREEN ENVIRONMENT III
1972-73

Participants

Acker, John R.	Klapstein, Annette
Anders, Jeff ²	Klein, Bart
Barron, Glna ²	Lanning, Dirk
Berman, Steven ²	*Lawson, Peter
Brockway, Marie ^{1 3}	Lilly, Sarah ³
Carstens, David	Manders, Donna
Falxa, Gary	Mitchell, Paul
Fellows, Demarie	*Peterson, Jack ²
*Frankforth, Dee ³	Postovit, Howard
Gerrish, Robert ³	Richards, Douglas
Griffin, Curtice	Shanewise, Steven
Groves, Randall	Ukrain, Devora
Holder, Bobby	Waste, Stephen
Jennings, Michael	Zimmerman, Gilbert ²
Johns, Lou	Zimmerman, Jenny ²
Johnson, Brenda	Herman, Steven (faculty)
Keatts, Robert ³	Wiedemann, Al (faculty)

1 - To distinguish from Evergreen Environment I (1971-72) and Evergreen Environment III (1973-74)

2 - Left program at the end of fall quarter.

3 - Started with program at the start of winter quarter.

* - TESC graduates, 1973.

II. PROGRAM ACTIVITIES

RESEARCH

During the fall quarter, each research team prepared a detailed and explicit research proposal. These were written using the general format of a National Science Foundation grant proposal and each individual within the team was responsible for part of the research and preparation, including the writing. The preparation included literature research, pilot field research, ordering and assembling materials, and, of course, the choice of research topic, area, and team members. Copies of the proposals were then reviewed by a number of biologists on the Evergreen faculty and staff, as well as the program members themselves. Criticisms were shared and copies of the proposals were filed in the college library. Proposal titles:

1. A habitat utilization study of certain raptors, shorebirds and waterfowl of the Nisqually delta.
2. Small mammal populations studies in the Puget Sound lowlands.
3. Community integration and sediment preferences of four native shellfish on The Evergreen State College Beach, Eld Inlet, Puget Sound, Washington.
4. Vegetation-soil relationships of a forest community in the Tsuga heterophylla zone of western Washington.
5. Winter ecology of a small estuarine pond and surrounding area in south Puget Sound.
6. Winter food habits and activity of coyote.

During the winter quarter, the various research teams spent the greater part of their time in the field conducting the proposed research. For some of the teams this involved "round the clock" and week-end work. For all it meant working in sometimes harsh, inhospitable weather, but weather was never used as an excuse for not doing something. As data began to accumulate, time was spent on initial analysis and organization.

The start of spring quarter saw essentially all field work completed and preparation of the research report in full swing. This involved analysis of samples and data, organization of information, the actual writing of the first rough drafts, preparation of figures and tables--all of the attendant myriad details that go into the making of a high quality report. Time was a pressure factor that became ever greater, since all had to be completed by 1st May. The last few weeks saw people working around the clock and by the deadline, fairly well worked over drafts were submitted. Some were ready for submission to a journal, others still had a bit of work to do, particularly with diagrams and tables. Titles of papers submitted:

1. Distribution and abundance of four native shellfish in relation to sediment characteristics, Puget Sound, Washington. (Donna Manders, Demarie Fellows and Robert Keatts)
2. The winter ecology of a small estuarine pond in South Puget Sound. (Brenda Johnson, David Carstens, Randall Groves and Paul Mitchell)
3. A study of forest communities in the southern Puget Sound basin. John Acker, Jacqueline Frankfourth, Robert Gerrish,

Aurtice Griffin, Bobby Holder, Michael Jennings, Llywolaf Johns, Sarah Lilly and Howard Postovit.)

4. Habitat utilization by wintering birds in the Nisqually River Delta, Thurston County, Washington. (Mariel Brockway, Annette Klapstein, Peter Lawson, Douglas Richards, Steven Shanewise, Devora Ukrain, and Stephen Waste.)
5. Winter density and ranges of deer mice (*Peromyscus maniculatus*) in a mixed forest. (Gary Falxa, Bart Klein, and Dirk Lanning.)
6. Winter movements of mountain beaver (*Aplodontia rufa*).(Dirk Lanning, Gary Falxa, and Bart Klein.)
7. Winter movements of the trowbridge shrew (*Sorex trowbridgei*) in a mixed forest. (Bart Klein, Dirk Lanning, and Gary Falxa.)

GROUP MEETINGS

Group meetings were held once weekly (usually Monday afternoon) for the purpose of discussing program business and sharing information concerning the progress and problems encountered in the selection of research projects and teams, the preparation of research proposals and the actual conduct of the field work. As work progressed, each team would have a period of time to explain what they were doing and how they were doing. A critique period followed each presentation. These meetings, which ran through the end of winter quarter, were well attended and were usually quite lengthy. Much useful information was exchanged. In the first weeks of the spring quarter, the meetings dealt mostly with business concerning the upcoming Arizona field trip.

FIELD JOURNAL

A primary responsibility of each individual in the program was the maintenance of a field journal according to a rigorous, prescribed format. These journals were reviewed by faculty during individual conferences and were expected to be kept up to date. They represented a major undertaking by each individual and work on them continued right to the end of the Arizona field trip.

INDIVIDUAL CONFERENCES

Each student was scheduled to meet individually with a program faculty member once every other week to discuss problems and progress and to review the field journal. Conferences were held through the fall and winter quarters, but were not held on a formal basis during the spring quarter.

COMPUTER WORKSHOP

Mr. James Johnson of TESC Computer Services gave a program oriented computer workshop for students of the Evergreen Environment. This workshop continued throughout the quarter, one morning a week. Full attendance was expected at the earlier sessions, with the understanding that a person or persons on each research team would take the responsibility for utilizing computer facilities in data interpretation and analysis for that team. The workshops continued into the winter quarter for three more half-day sessions, after which individuals worked independently on computer work related to their projects.

STATISTICS WORKSHOP

Mr. Dan Chang of TESC Learning Resources gave a statistics workshop to Evergreen Environment students beginning the third week of winter quarter and running for five half-day weekly sessions. Work covered an introduction to probability with an emphasis on tests of significance for biological data. Full attendance was expected by all participants.

PHOTOGRAPHY WORKSHOP

Mr. Don Lennartson gave a photography workshop to interested members of the Evergreen Environment. It began the sixth week of winter quarter and ran for eight sessions into the spring quarter. Emphasis of the workshop was on photographic theory, scientific photography and darkroom technique.

PROGRAM WORKSHOPS

Single session, half-day workshops conducted for the program by program participants.

1. Taking field notes and maintaining a field journal. Herman. 3 October.
2. Use of library and other literature resources. Herman and Wiedemann with Malcolm Stilson. 4 October.
3. Bird identification. Herman. 12 October.
4. Campus plant identification. Wiedemann. 17 October.
5. Community similarity analysis. Herman and Wiedemann with Jim Johnson. 24 October.
6. How to write research proposals. Herman. 2 November.
7. Survey methods. Wiedemann. 14 November.
8. Principles of organism classification. Herman. 18 January.

9. Preparing study specimens of vertebrates. Herman. 25 January.
10. Forest pathology. Kenelm Russell, Washington Department of Natural Resources. 29 January.
11. Shellfish biology. Fellows, Manders, Keatts. 1 February.
12. Basic surveying. Randall Groves. 8 February.
13. Soil analysis. Lou Johns. 15 February.
14. Small mammals of the Evergreen campus. Falxa, Lanning, Klein. 1 March.
15. Winter twig identification. Holder and Postovit. 8 March.
16. Water quality measurements. David Carstens, Brenda Johnson. 15 March.
17. Plant identification. Wiedemann. 19 April.

TEXT AND TEXTBOOK TUTORIALS

All program participants were required to read and understand the program text, Ecology and Field Biology by Robert L. Smith. Eight tutorial sessions were held in the fall quarter for the purpose of discussing and explaining portions of the book. Attendance at these sessions was voluntary. Tutorials did not continue into the winter and spring quarters.

LOCAL FIELD TRIPS

Voluntary local trips to acquaint participants with local natural history and to encourage field observation and note-taking.

1. Southern Puget Sound Basin by Washington National Guard helicopter. Observation of Cooper Point, Mima Mounds area and Nisqually Delta. 10 October.
2. Thurston County dump to observe gulls and try to identify. 25 October.
3. Leadbetter Point. Sand dune ecology and birds. Two days, 7, 8 November.
4. Mima Mounds. 15 November.

BIRD WALKS

On-campus walks conducted one early morning a week for the purpose of gaining experience in field observation, identification and note-taking, and to become familiar with local birds. Conducted most Thursday mornings during fall quarter and about half the Thursday mornings during winter

and the first part of spring quarters. Attendance voluntary.

FILMS

Two films shown during the fall quarter to help introduce the scientific approach to problems in natural history. Both shown 2 October.

1. Birth of the red kangaroo.
2. The Malee fowl.

GUEST LECTURES

1. Dr. Victor Scheffer of Bellevue, Washington, spoke on the origin of the Mima Mounds, 30 October.
2. Glen Phillips, "Alaska Pipeline Alert", 12 March.
3. Kenelm W. Russell, "Pathology of Forest Trees", 29 January.

EXAMINATIONS

Two diagnostic examinations were given to students during the fall quarter. Both dealt with reading abilities. One evaluated the individual's reading ability in terms of comprehension, vocabulary and rate; the other evaluated the reading difficulty level of the program textbook.

THE EVERGREEN NATURALIST

A newsletter edited and written by program members and designed to communicate information concerning natural history to the Evergreen community. Three issues were published during the fall and winter quarters: Number 1, 7 November 1972; Number 2, 28 November 1972; Number 3, 20 February 1973.

EVALUATIONS

All program participants were required to write in-house self-evaluations during the final week of fall quarter, and transcript evaluations during the final week of spring quarter.

FINAL FIELD TRIP

The final field trip started on 1 May 1973 and ended on 5 June 1973. The trip had two main purposes: (1) to integrate and utilize the skills and knowledge acquired during the year in a common field experience; and (2)

to become familiar with a wide variety of habitats and their associated flora and fauna. There were three phases to the trip: (1) the trip down which took 12 days; (2) the stay at the research station for 14 days; and (3) the trip back of 11 days.

Phase 1. (1-12 May)

- 1 May. Leave Olympia and travel to Shelton Wayside in Eastern Oregon.
- 2 May. Travel to the Malheur Environmental Field Station near Burns, Oregon.
- 3 May. Visit the Malheur National Wildlife Refuge, see Great Basin Desert.
- 4 May. Travel to the Stillwater National Wildlife Refuge, Fallon, Nevada, via the Steens Mountains, and through Great Basin Desert.
- 5 May. Travel to Deep Springs, California. Camp in Wyman Canyon.
- 6 May. Study Wyman Canyon area, western Mojave Desert area.
- 7 May. Travel to upper Death Valley, camp at Mesquite Springs.
- 8 May. Study Death Valley area, camp at Furnace Creek.
- 9 May. Travel to Las Vegas, camp at Lake Mead.
- 10 May. Travel to Oak Creek Canyon and Sedona, Arizona.
- 11 May. Travel to Tucson, Arizona, and camp Palo Verde campground near the Arizona-Sonora Desert Museum. Visit Old Tucson.
- 12 May. Visit the Arizona-Sonora Desert Museum. Travel to Portal, Arizona, and the Southwestern Research Station of the American Museum of Natural History.

Phase 2. (12 to 26 May)

This period was spent in residence at the Southwestern Research Station. Program participants were asked to develop short term research or study projects, either individually or as small teams, and preferable to do this work in an area different than that of their year long projects on campus. Following is a list of projects undertaken.

1. Population studies of Peromyscus boylii and Sigmodon ochrognathus near Portal, Arizona. Bart Klein.
2. Preliminary planning for study of coatimundi. Dirk Lanning.
3. Study of red snow algae above 8,500 feet on Chiricahua Mountains. Paul Mitchell and Demarie Fellows.
4. Field key to genus and habitat study of shelled molluscs of the Chiricahua Mountains. Robert Keatts.

5. Key to trees and shrubs of the Chiricahua Mountains. Bobby Holder and Curtice Griffin.
6. Activity study of Pogonomyrmex occidentalis (Western harvester ant). Lou Johns.
7. Natural history of the Chiricahua Mountains. Brenda Johnson, Steve Waste.
8. Population structure and home range of four species of lizards in the Chiricahua Mountains. Howard Postovit and Randy Acker.
9. Feeding behavior of the black-throated gray warbler (Dendroica nigrescens) in oak-juniper woods. David Whitacre.
10. Social behavior of the acorn woodpecker (Melanerpes formicivorus). Devora Ukrain.
11. Natural history and distribution of rattlesnakes in the Chiricahua Mountains. David Carstens.
12. Vegetation differences on north and south slopes in an area of the Chiricahua Mountains. Dee Frankforth, Annette Klapstein, and Donna Manders.

Phase 3. (26 May to 5 June)

- 26 May. Travel from Portal, Arizona to Canyon de Chelly National Monument, Arizona.
- 27 May. Travel to Jacob Lake, Arizona
- 28 May. Travel to North Rim of the Grand Canyon, then to Escalante, Utah.
- 29-31 May. Explorations of the Escalante River area, Utah.
- 1 June. Travel to Wasatch Mountains, Utah.
- 2 June. Travel to Ketchum, Idaho.
- 3 June. Travel to Deadwater Campground, vicinity of Salmon, Idaho.
- 4 June. Travel to Apgar Campground, Clearwater National Forest, Idaho.
- 5 June. Return to Olympia, Washington.

THE EVERGREEN ENVIRONMENT

GROUP CONTRACT

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PURPOSE

To develop the research and writing skills of the program participants, and to provide information and data on the natural history of the Evergreen campus.

OBJECTIVES

1. Develop and write a research paper of standard style and format using data gathered on a natural history research project.
2. To learn basic ecological principles by means of reading, lectures, and actual field experience.
3. To become proficient at making field observations, recording those observations in a field notebook, and transcribing those notes to an organized journal according to a prescribed format.
4. To develop certain basic skills commonly used in the collection and interpretation of field and laboratory data, including but not limited to the following:
 - a. statistical methods
 - b. computer programming
 - c. organism identification
 - d. ecological sampling techniques
 - e. collection and preservation of biological specimens
 - f. environmental measurements
 - g. basic field mapping
5. To improve general reading and writing skills

PROGRAM ACTIVITIES

1. Participation in a team research project will be required of all members of the program.
2. Weekly group meetings will be held to discuss research problems and progress and to conduct program business.
3. Lectures and films will be scheduled
4. The field journal will be maintained by individuals as a record of all program and personal field activities.

5. Workshops will be attended to develop basic research skills, as described in the Program Objectives.
6. Reading and understanding the Program textbook, Ecology and Field Biology, is required.
7. Examinations, oral and written, will be part of of the learning process.
8. Individual conferences with faculty be scheduled at least once every other week.
9. Field trips to surrounding areas will be scheduled; participation will be voluntary.

EVALUATION

Each student will be evaluated on the basis of his own work and progress. Criteria for this evaluation will be:

- a. quality of the completed research paper
- b. participation in Program activities
- c. understanding of basic ecological principles

STEVE HERMAN

AL WIEDEMANN

GROUND RULES

CREDIT -

Credit determinations will be made at the end of each quarter.

1. Full credit (3 units) will be granted to students who have provided evidence of full time involvement in the program as outlined in the Program Contract.
2. Partial credit (1 or 2 units) will be granted to students who have not fully participated in the program. Less than full credit will be given only after:
 - a. The student has been informed in writing of his situation prior to the quarter's end.
 - b. Conference and negotiation with the student involved concerning his performance.
3. No credit will be granted in cases where the student has failed to participate in the program. In general, such students will be asked to leave the program.

ATTENDANCE-

Full involvement in the program will normally require attendance at all program activities.

EVALUATIONS-

Student self evaluations will be written at the end of each quarter. The student self evaluations will be due on December 8 (first quarter, March 16(second quarter) and April 27(third quarter) These in-progress evaluations are for retention in the teaching portfolio only.

In addition to the above evaluations, final transcript student self-evaluations and student evaluations of faculty will be due on May 4.

Student evaluations of faculty will also be encouraged at the end of each quarter.

PORTFOLIOS-

A portfolio is a record of academic activity at Evergreen; two kinds are maintained for each student:

1. Teaching(travelling) Portfolio- maintained in the program office and follows the student from program to program. It contains:
 - a. Program descriptions and/or contracts for all work attempted.
 - b. Evaluations of all program and contract work attempted.
 - c. Student work judged worthy of inclusion.
 - d. Copies of administrative action forms.

Changes in Teaching Portfolio content will occur only with the knowledge of the Program Coordinator.

2. Transcript(Official) Portfolio- maintained by the registrar as a permanent official record for transcript purposes and containing:

- a. program description
- b. faculty evaluations of student
- c. student self evaluations
- d. credit reports with suggested course equivalencies.
- e. edited samples of student work, to be inserted only when the student leaves Evergreen.

INTERNSHIPS-

Internships and other non-program activities will be permitted only if those internships or activities do not interfere with the program in general or the student's participation in the program. Student's participating in activities which preclude full time involvement in the program will be expected to locate an appropriate sponsor for that work.

STEVE HERMAN

AL WIEDEMANN

GENERAL OUTLINE OF ACTIVITIES (Except First Week)

TERM	WEEK	DATES,				
			WEDNESDAY	THURSDAY	FRIDAY	SATURDAY/ SUNDAY
			Bird Walk			
0900 -						
Group meeting						
AM			Workshops	Workshops	Open work day all day.	
			Faculty Conferences		Faculty not available for consultation	
PM			Faculty Conferences	Work on Projects		
			Work on Projects	Faculty available for consultation		
			Faculty available for consultation			
NING						

PROGRAM EVALUATION
EVERGREEN ENVIRONMENT II

ALFRED M. WIEDEMANN

In June, 1973, 28 members of the Evergreen community saw the culmination of a remarkable experience. For all of them the effect on their lives was memorable, if not momentous. For 26 of them, Evergreen students, it was an introduction to the "real world" of biological science and natural history. For two of them, Evergreen faculty, it was an experiment in a new way of teaching. For almost all, student and teacher alike, the experience provided a new dimension in relationships among people, a dimension with meaning that went far beyond the usual student-teacher relationship.

This experience was Evergreen Environment II, and my participation in it resulted in the finest teaching experience I have ever known. I worked with Steve Herman in the organization of the program early last fall, however the basic concept of how the program would operate and what its objectives would be, were Steve's. By the time I started actively working with him, most of the students had been selected and interviewed. Because of arrangements made the previous year regarding my term of employment for the academic year, I did not participate in the program during the winter quarter.

The interview and careful selection of the students seems to have been a good idea. It is difficult to say whether a totally open entry policy would have resulted in the same sort of experience. As it was, out of 26 who started work in the fall quarter, six left before completing the program. However, only two of these left because of what might be termed "unsuitability". An additional five joined the program at the start of winter quarter. These five all successfully completed the program. The individuals in the program had quite variable backgrounds and interests -- some with little biology, others with a considerable amount; some with definite interests, others with only very general interests. But regardless of background or interests, everyone worked with about equal levels of drive, interest and enthusiasm, and these levels were high. If one wants to speak of quality in students, then these people were top quality.

Was it the people or the program that made the whole experience so remarkable? It probably took both -- the meeting was fortuitous. The "framework objective" of the program was the key. Here was a goal -- the writing of a research paper of a quality that could be published in a professional journal. A distant goal, but, given enough hard work, an attainable one. And the hard work began immediately. Sub-objectives were identified, some to be met by structured program activity, others to be met in the course of work on the research project.

There were certain "givens" in the program (the contract) -- activities everyone was expected to participate in. These proved very beneficial in getting things off in the right direction. Teams had to be formed, research

proposals written, group and individual program activity obligations met. Ground rules were developed, setting guidelines for participation, evaluation and accomplishments. The contract, the guidelines, and the agreement to work in accordance to these were an outgrowth of the previous year's Evergreen Environment experience. As it turned out the contract never had to be invoked as a motivating factor -- the spirit of E² developed early and was a dominant, motivating force throughout the year.

How did the various "learning activities" of this program work? What were their strong points? Their weak points? There were two classes of activity: main, or year long, required of all; and quarterly, sometimes one-time, often optional activities.

Research. The major activity. The most difficult part of this was the selection of a project, forming teams and then writing a formal research proposal. We allowed a quarter for this, and no less would do. Much guidance was needed, both in the selection phase and the proposal stage. I could have given much more time to this -- in fact, I doubt that too much could be given not information, but guidance. Selection of projects and formation of teams was up to the program participants. Except to give suggestions about work that could or needed to be done, we made no decisions about who did what with whom. Team size can be variable. Small teams result in too many to deal with; large teams can have difficulty with internal organization and functioning. However, both extremes may be appropriate depending upon the people and the project. Our smallest team was three, the largest nine. For the field work, the actual research project, at least a quarter is needed. And faculty must get into the field with the workers -- to guide, to know what is happening. Unfortunately, I missed this entire phase, something I regret very much, and would never do again. Analysis, synthesis and organization of the data into a paper requires at least the better part of a quarter -- all if possible. This undergraduate research concept is sound, it works, and should be tried again and again. It gives a valid graduate school type experience in research to undergraduates, experience which will be useful to them whether they go on to graduate school or not.

Field journal. This was the second major activity of the year, and the one which took the most encouragement and insistence that it be carried out. Steve was marvelous in his fanaticism about it -- in his insistence upon style, format, organization and content. He was more inspirational than demanding. All participated, most enjoyed it, and probably all benefited.

Individual conferences. These were probably most useful at the start of the first quarter. At that time they provided a chance to get to know the people and discuss problems and activities. Thereafter, as there was more and more informal individual contact and research team contact, scheduled conferences became less and less necessary. However time should always be available for individuals to come and talk, scheduled or not.

Group meetings. The group meetings proved to be a valuable learning experience. As projects got underway, the teams shared experiences and problems. The sessions were often lengthy and active. As a means of helping everyone keep up on what others were doing, these meetings more than served their

function. People also learned from each other -- a more valuable outcome. Attendance by all was expected, and all generally did.

Textbook. Probably our "weakest" activity. The book was good, but we did not structure the reading of it to any great extent. I would guess much of it went unread, though in many cases it was used as a reference when getting into new areas. In the pressure of having to do a lot, reading the text got lower priority. The weekly tutorials were variable in their success. Perhaps a text was not needed, but if it is used, it should be made a more positive part of the program. Perhaps a shorter one would have been better. Smith is comprehensive and understandable, but contains a lot of material.

Workshops. We had workshops of all kinds. Some ran a single half-day a week for an entire quarter and more; others were only a few hours long in total. All proved valuable -- if not to everyone, then at least to a few. Some appealed only to special interests or were complex enough so that only the dedicated stayed on. The short ones in some cases could do no more than provide familiarization or an introduction. Workshops growing out of research experience were valuable because "to teach it is to know it". The Evergreen concept of "the workshop" is a good one, but it needs a lot of developing, particularly where complex skills and concepts are involved. They need to be better structured, better prepared for -- more closely tailored to the needs of the program (especially if we are to stay away from the "general service course" practice). The computer workshop, for example, was well organized, but there was difficulty in getting it related directly to the kinds of things our people were and would be doing. The statistics workshop was even more of a problem. Even those who stayed with it did not seem to get a lot from it in terms of understanding what and why. It was taught by a non-biologist who just could not give it the orientation our people needed (though Steve did work at this -- interpreted -- whenever he could). Workshops, whether long and detailed or short and simple, must meet immediate or anticipated needs. At the same time, except for the most simple, they must be planned ahead. Preparing for workshops is a good place to get used to planning instruction through the use of instructional objectives.

Field trips, bird walks. We held this type of activity to a minimum, though recognizing the value of such trips to train in observing, identifying and the taking of field notes. Such trips take time, and most actually took place early in the year before the pressure of field work got too great. And they served their purpose -- got people acquainted with the area, exposed people to new things and generated enthusiasm for natural history type activities. Without a lengthy year-end field trip as we had, more frequent and longer local trips would be desirable. One necessity for the future is that all program participants should have access to binoculars, preferably their own, or else the college should have plenty to check out. They are indispensable for field work.

Miscellaneous activities. We did a number of things that were not repeated often, but all of which tied in with our overall objectives. We did some initial work at evaluating reading skills, but no one seemed to have any serious problems and there was no follow up. We also put no structured effort into improving writing, though the written evaluations showed that in some cases, work in this skill would have been justified. Since the research papers were jointly authored,

it could not be said a paper was the work of this or that person, though in fact they probably were.

The Arizona field trip. Never was an academic event so looked forward to, so disputed over, and so successful for all involved. It was Steve's dream. For the rest, it was the culmination of a year's hard work, and eagerly anticipated. It would provide a respite from months of thinking, reading and field work, but this same work and experience would make the trip satisfying and rewarding. These same months of working together would begin to form the links that would eventually, on the trip, draw the group together into a close, warm family. The results would not have been the same if the trip had been taken at the start of the year. That it worked the way it did could hardly be entirely put down to planning. It was planning, it was the people involved and it was, at least a little bit, luck. The trip was a "learning experience" from beginning to end. Birds, reptiles, mammals, plants, rocks -- whatever. Nothing escaped the attention of our inquisitive and enthusiastic group. And it went into field notebooks and journals. At the research station everyone worked -- everyone was excited about the natural beauty about them. And it wasn't all work. There was play, too -- happy play that left happy memories. Relationships among people developed and bloomed. The trip was largely financed by the college, including most of the room and board costs at the field station. Most of Steve's troubles in planning the trip related to financing, at least partly because he had a point to make. In a natural history program of this type, our laboratory is the outdoors. We have no expensive equipment, no great demands for inside space. Chemists, artists and molecular biologists alike get their elaborate equipment needs met with no academic protest. What the field biologist needs is minimal compared to all of this. While room and board costs need not be furnished by the institution, certainly travel expenses and other costs are valid instructional costs -- as much as laboratory equipment and utilities costs. But however it is financed, a trip of this nature is the only way to end this type of program. For Evergreen Environment II, it was the high point in a year of high points.

What did I personally get from my participation in this program? First and foremost, a tremendous satisfaction in (1) helping in the development of a new and effective way of teaching biological research at the undergraduate level, and (2) being involved in the academic and personal growth of a large number of very fine people. I have a new sense of what people can do when they are interested and determined, and of how they can work together when it is necessary.

I have also become aware -- again -- of how important it is to remain current in one's own field. I have had severe difficulty with this because of so many institutional demands (in addition to the basic responsibility of teaching and facilitating learning). The mechanism or opportunity for "keeping up" is in the program, but helping individuals with fundamentals in many areas does not make this as easy as it would seem. Certainly there was the opportunity to see and consider many new things. My interest in birds was particularly nurtured during this year and I picked up a lot of information on vertebrate and invertebrate zoology.

Perhaps most rewarding to me was the opportunity to become part of a close community of people who not only cooperated in learning, but who also learned to

live together and to relate to each other to an extent I found quite remarkable. It was an entirely new experience for me and at least to some degree made me aware of what is possible in relating to others. The often enforced distinction between faculty and students -- them and us -- was not so much broken down as transformed into a more personal "intergenerational" relationship. We -- Steve and I -- couldn't really become part of the generation characterized by most of the people in the program, but we learned of it and from it. I became aware of new capacities and abilities for tolerance, playfulness, concern and love.

What about my role as teacher? It really did not exist in the traditional sense. I felt more like an advisor or guide. I "taught" in the sense of answering questions and giving information when it was requested or required. I rarely attempted to collect a "captive audience" and expound. Sometimes I think I am not demanding enough in details, yet there was no point to that with this group. We set the objective for the program -- the individuals and the teams set their own demands -- and they were severe. I felt comfortable in this teaching situation -- both professionally and personally, it was a rewarding year.

Conclusions. The program was an unqualified success. It functioned as we had planned it -- there was no reason to change any part of it. Every individual completing the program made significant advances both in the development of biological knowledge and skills and in the acquisition of insight into personal goals and philosophies.

Things I would do different department. Very little. Perhaps reconsider the value of a textbook, and if used, structure its use into the program more thoroughly. Try to work on the development of basic skills and concepts earlier in the year (for example, statistics). Most importantly, I would minimize non-program institutional activities and spend more time with individuals and teams. Again, particularly in fall quarter, I felt my main responsibility -- the facilitation of learning -- was getting short shrift. The final field trip: indispensable. About the only change I see would be to try to get back in time to allow a week or so finishing up time prior to the end of the school year.

All in all, Evergreen Environment II is a model of the kind of program that offers real opportunity for exciting and relevant learning at the undergraduate level. It is the kind of thing Evergreen as an institution of higher learning should excel in. Whether the success and personal satisfaction of Evergreen Environment II can be repeated is open to question -- how much of that success was due to the personal chemistry of the people who made up the program? We will see.

23 July 1973