

APPENDIX B
HISTORY OF THE GRADUATE PROGRAM IN ECOLOGY
AT THE UNIVERSITY OF TENNESSEE KNOXVILLE
INTERVIEWS

What follows below are not verbatim transcripts of the taped interviews, but rather edited excerpts from them.

Dr. Frank McCormick, former Director, Graduate Program in Ecology

Program was initiated in 1969 or 70 and was the first program in the US to offer graduate degrees in ecological science. Jim Tanner preceded me as the interim director and I held the Director position for 8 years. At Tennessee that's the way it was, that is ecology is an academic scientific pursuit, but the one thing that attracted me to Tennessee is that we include along with teaching and research, the vast area of ways to apply the science and this may be in part due to the history of establishment of the program. I think the program was established as the nation's first as much through the leadership of ORNL as from UT itself. Oak Ridge has an outstanding group of environmental scientists, and there's no way they could continue to attract the nation's best scientists to work in a national lab, particularly with the image of a bomb plant, you know back in earlier years, unless there was an opportunity for those scientists to participate in a university campus. UT attracted me because of the opportunities to apply ecology to real life problems and these opportunities arose through our relationship with ORNL, GSMNP, and unfortunately to a lesser degree with TVA. We just never have really gotten going in terms of meaningful cooperative programs with TVA, but the potential's there.

To my knowledge we have never had a student graduate without a job waiting for them, and that's because we have kept up with the changes in the field in terms of applications. When I came to Tennessee I think about 80% of our graduates looked to academia for jobs, now I think that fewer than 10% do. We are good at changing our curriculum to prepare students for the jobs that really exist, and I think we're good at that. So TN has changed in that way, we've kept up with the times.

Ecology is clearly interdisciplinary, and universities were asking in the early 70's how to organize the field. I think we are one of the very few in the world where our program is truly interdisciplinary. Every faculty member has a joint appointment, so you have one foot in each department. We are an intercollegiate program.

Where some real strengths are is in a new area called microbial ecology. We looked back in the 70's to what areas will really grow, and identified this. Some real results are the work of Gary Sayler and his students who've identified bacteria which gobble up toxins so you can let nature detoxify herself if you know how to direct it. UT researchers have contributed perhaps more than anyone else to research in GSMNP. In particular they don't have a wildlife biologist at the Park, relying upon Mike Pelton and his students for research to guide management. For the last 10 years we have directed summer institute in ecological approaches to resource management. This is mainly for

developing country scientists, supported by the UN. We have over 100 past participants who've gone home to over 30 nations around the world and are putting into practice the lessons learned here. We are now planning to offer training in their own countries on their own problems.

One change that is taking place is that we have relatively more doctoral students now in relationship to masters students. There are more jobs out there for masters students. One of the best things we can be doing is working more on a global scale.

Dr. James Tanner, Professor Emeritus of Zoology

I was chairman of the committee to first set up the program and that must have been around 1967. I was the first director of the program beginning in 1969 and through when Frank McCormick took over. I think the spark came from Stan Auerbach at ORNL and I think he came over with Dave Reichle, and we met in Walter Herndon's office and discussed the possibility of setting up a new graduate program in the field of ecology. For a couple of years we discussed, drew up proposals, discussed them with faculty members in liberal arts, agriculture and other colleges, gradually modified the proposal and did something that was acceptable to everybody. Started in January of 1969. Was evolved out of all this discussion was a completely interdepartmental intercollegiate program in which any faculty member who has any relation to ecology could participate in the teaching and supervision of graduate students in the program. We designed a very flexible program, students could work with a faculty member in any of the departments.

There were benefits for faculty members because they could have a good graduate student through the program, even though that students was not in their home department. The biggest interorganizational program is the fact that many students have been supported at ESD. This saves the university money and of course theirs always the fertilization of ideas by getting different people together. The biggest thing to come out of the program is the great number of theses and dissertations which have been written. The building of science is built a brick at a time, and these theses and dissertations might be called bricks which added to the building.

Back in 1969-70 there was a great concern about the environment, and there were a lot of environmentalists who were much more emotionally involved than they were scientifically involved. We had some trouble with some of those people. One man thought it was a program to encourage picking up litter. Another man thought it was a program to organize demonstrations against the establishment. At that time the EPA was established and the national environmental policy act was passed, and there was great discussion about ecologists might or should do about these, impact statements etc. One of the things which gradually developed during the course of the program was the cooperation with mathematicians and ecologists. We didn't initiate this but this is one thing which has grown and is still strong.

The program was running well by the time I left as director, it was flexible, good for the students, good for the faculty, but it needed to develop some aspect of ecology in which it would be preeminent over the nation. We haven't done that yet, though we have

strengths in two or three fields, but their not the best in the country.

This is where we had a problem at first in that we had to convince the faculty members and the department heads that we were not trying to set up an empire. That took some time. That's why it took two years to get the program going after the beginning meeting. We had to do quite a bit of persuading.

Dr. Stanley Auerbach, former Director, Environmental Sciences Division, Oak Ridge National Lab

Before the ecology program was established there were early linkages starting in the mid 50's with several faculty members at UTK working at ORNL on a variety of ecological problems particularly related to effect of radioactive substances on ecological systems. Then several ecologists including Jerry Olsen, George van Dyne, and Bernie Patten were hired to work in the application of systems theory to ecological problems and I approached UT with the proposal to have them offer a year long course in systems ecology. And the three of them developed a curriculum beginning in about 1964 and they taught this course until about 1967. By then graduate students had joined us. Under the eegis of a Ford Foundation grant which provided for bringing laboratory staff to the university to teach on a part-time basis, both organizations looked on that as a way to attract good students and faculty. We started talk about developing a program in ecology and received a very willing reception from Vice Chancellor Herndon. Dean Hilton Smith and Dean Alvin Nielson were not enthusiastic about creating a separate institute. At the same time we felt it was not appropriate to establish a new department. The current departments were less than enthusiastic about it.

We recognized that it was timely to start an ecological program. And I assured them that I would back them with funding and staff because we wanted to have the staff teaching and we wanted to have graduate students come who could get their degrees at Ut while working at the lab. We felt there had to be some kind of entity which was independent and yet had connections with departments. Very fortunately, we had picked up allies in many other colleges who were interested in the establishment of a program, and in our own conception of the program we viewed it as very flexibel in which any student who were interested in developing an ecological orientation could enter the program.

Director of the Program would sit on the Life Sciences Council along with the department heads, the staff would have joint appointments. We found someone who would fit the bill of Director, who was approved by Ut after an interview process, he was a distinguished British ecologist and accepted the position. But he never came, and after a year of waiting for him to appear Jim Tanner took over as acting director of the program, until Frank McCormick arrived.

The program has been from the lab point of view very, very beneficial to us. We have in residence all the time about 12 graduate students. The areas of emphasis have become broader. We still have that emphasis on systems ecology, we're a leader in that area. Also in radiation ecology, in the reservoirs, in GSMNP. A large number of our staff have adjunct appointments.

About 1975 we became interested in ecotoxicology, and dealing with hazardous waste dumps. Another new area of joint effort is in biotechnology. The program in ecology has had a stimulatory role by providing a common arena for dialogue among different but related sciences.

Dr. Michael Pelton, Professor of Forestry, Wildlife and Fisheries

Became a member of program in 1972. Have been impressed that over the years the amount of interactions which have increased over the years between faculty in our area which is really more applied ecology and the faculty on the main campus which are really more involved with theoretical questions. The mix of the two has been real healthy, for ourselves as a faculty and for the students in particular. In a way it has bridged a sort of gap which has existed historically between the main and ag campus but philosophically between the applied and less applied areas. I don't think the program has changed that much. I think for our students it has provided breadth and flexibility.

This ecology program is unique in that it is sort of a loose confederation, but an organized one of a variety of people in a wide variety of areas, and it functions well. Our department does not have a Ph.D. program, and all my Ph. D. students have gone through the graduate program in ecology. About a fourth of our students in wildlife and fisheries have actually gotten their degree in ecology.

The ecology program has really provided the mechanism to allow the continuation of the longest running study of bears anywhere in the US (18 years). The ecology program provided the backing and incentive to keep that whole program going. The techniques developed for this are now being applied to a variety of studies of large, free ranging mammals.

Dr. Henry Fribourg, Professor of Plant and Soil Science

It was due to several departments from the Institute of Agriculture joining with several departments from Liberal Arts that the Graduate Program in Ecology was approved.

Originally ecology was extremely descriptive, and with advances in statistics and the advent of computers, it became possible to better quantify the relationship between organisms and their environment. So in my perspective, ecology has become alot more quantifiable over the years. In agriculture we have an advantage over those who work on natural situations because we have the ability to control some of the factors, and see what the effects of particular factors might be.

Two of the best students I ever had started out in the ecology program. The program has made tremendous strides in attracting people to associate themselves with the program. In many ways I've been disturbed with the very small number of students in the program whose main activities are in botany or zoology, who take courses in plant and soil science.

In terms of training of students I think the program should try to encourage students to take an even greater diversity of courses than they are getting now.