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BIOLOGICAL FIELD STATIONS OF TENNESSEE, A SURVEY OF FACILITIES AND ACTIVITIES

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INTRODUCTION

The Tennessee Academy of Science has been involved in the support of biological field stations since the opening of the Reelfoot Lake Biological Station in 1932. During its operation the station attracted nation-wide attention. In January, 1977, the Academy terminated its lease to the grounds on which the station was located, and by action of the Executive Committee, will continue to support scientific field stations within the state by providing modest funds for student support through a position on the Executive Committee to be called Scientific Field Station Liaison. In addition, an attempt will be made to collect descriptive material on all scientific field stations within the state for inclusion in an annual report to the Academy.

This report will describe facilities and activities at three biological field stations within the state which are currently in operation. It is derived from information provided by Dr. Neil A. Miller, Director, Edward J. Meeman Biological Field Station, Memphis State University; Dr. Robert A. Carlton, Director, Oxley Biological Field Station, Lambuth College; and Dr. Robert E. Martin, Director, Tech Aqua Biological Station, Tennessee Technological University. Inquires regarding course offerings, registration, fees, etc., should be addressed to the appropriate director.

E. J. MEEMAN BIOLOGICAL FIELD STATION
DR. NEIL A. MILLER, DIRECTOR
Memphis State University
Memphis, TN. 38152

The Edward J. Meeman Biological Field Station was established in September, 1967, as a natural area for biological studies under the direction of the Department of Biology, Memphis State University. It is located adjacent to Meeman-Shelby Forest State Park with the main entrance at 1236 Cuba-Millington Road. The station is located on the Third Chickasaw Bluff, and the majority of the land is forested, with oak-hickory the dominant species. The slope hardwoods also contain a large percentage of American beech and yellow poplar. The station grounds consist of approximately 252 ha, of which all but six ha are on the loess bluff. Also present are one permanent stream and seven farm ponds ranging in size from about 0.3 ha to 1.0 ha. Some cultivated fields have been allowed to enter into succession, while a few of them have been planted for tree improvement studies.

The station has two caretaker houses plus a small house under a rental management plan. The biology classroom/laboratory building consists of three lecture/laboratory classrooms, one conference room, two office/research suites, and a single office room. The building also has a small kitchen, showers and restrooms, and central air conditioning.

Present research on the area includes a tree improvement program in conjunction with the Tennessee Division of Forestry and the U.S. Forest Service, a raccoon population study, and a turkey transplant program with the Tennessee Wildlife Resources Agency. Numerous plant and invertebrate studies are also in progress at the station.

Several courses utilize facilities of the station, including Field Techniques in Ecology, General Ecology, Ecology of Forests and Arable Lands, Ornithology, Field Botany, Vertebrate Zoology, General Entomology, Special Problems, Mycology, and Mammalogy. During a pre-summer session, 1977, Field Techniques in Ecology was offered at the station utilizing a grant from the Tennessee Academy of Science in the amount of $150.00 to help defray student transportation costs to and from the station and to various study sites. Two courses, Field Techniques in Ecology and Special Problems, will be offered during the pre-summer session of 1978 (May 9-26), followed by Ecology of Forests and Arable Lands during the extended summer term (May 31-August 11).

A. D. OXLEY BIOLOGICAL FIELD STATION
DR. ROBERT A. CARLTON, DIRECTOR
Lambuth College
Jackson, TN. 38301

The A. D. Oxley Biological Field Station, operated by Lambuth College, Jackson, Tennessee, and opened in November, 1976, is located at Kentucky Lake near Eva, in Benton County, Tennessee. It is situated on a 445 ha tract belonging to the Lakeshore Assembly of the Memphis Conference of the United Methodist Church. Much of this land is being left undisturbed and a variety of terrestrial and aquatic habitats are readily accessible. Bordering this tract is the 1093 ha acre Nathan B. Forrest State Park. Kentucky Lake lies about 100 m from the station building.

During much of the year the station is used for overnight and weekend studies for courses based on the Jackson campus. In the summer of 1977 Ms. Katherine G. Turner, a graduate student at the University of Tennessee, Knoxville, used facilities of the station to study the carrying capacity of the local deer population by considering the nutritional value of the browse in relation to soil nutrients. This study was aided by a grant from the Tennessee Academy of Science in the amount of $125.00. During the summer of 1978, the station will be utilized for teaching An Introduction to Biology in the Field for 12 students who will be in residence at the station. This course will carry up to 8 hours of credit, is intended for in-coming freshmen and other beginning biology students, and will be partially supported by a grant of $500.00 from the Tenessee Academy of Science.

TECH AQUA BIOLOGICAL STATION
DR. ROBERT E. MARTIN, DIRECTOR
Tennessee Technological University
Cookeville, TN. 38501

The Tech Aqua Project was begun in 1964 by Tennessee Technological University. Facilities construction was initiated in 1970 with major support from the National Science Foundation, and the first summer session on station was held in 1971. Summer programs are operated by the Tech Aqua Consortium, formalized in 1969, and currently consisting of Tennessee Technological University, Middle Tennessee State University, Tennessee State University, the University of the South, the University of Tennessee at Chattanooga, the University of Tennessee at Knoxville, Vanderbilt University, and Western Kentucky University.

The Tech Aqua Biological Station is located on State Highway 56, 12.9 km north of Smithville, Tennessee, and 9.7 km south of the Smithville exit from Interstate 40. Tech Aqua occupies 222.6 ha of land on the southern shore of Center Hill Reservoir, including 11.3 km of shoreline. Additional study areas covering 7285 ha with more than 644 km of shoreline are provided through an agreement with the U. S. Army Corps of Engineers. The National Science Foundation has recently included Tech Aqua as one of three aquatic sites in the national Network of 67 Experimental Ecological Reserves.

Structures at Tech Aqua include 18 buildings. Two laboratory buildings are used for class instruction, while three air conditioned dormitories provide space for 60 students. The cafeteria provides daily food service. Eight staff houses, a bath-laundry, a shop, a storage building and a small group unit with its own laboratory, bunkrooms, kitchen, staff room and living-dining room complete the station facilities. The station operates its own boat dock and has available for class work a 30-foot deckboat, two 18-foot workboats, and smaller boats. In addition, a 45-foot laboratory-houseboat, the *Aquarius,* serves as a research vessel.

For the past few years courses offered during the summer session have consisted of a "core" curriculum consisting of Local Flora, Freshwater Algae, Freshwater Invertebrates, Ichthyology, Limnology, and Ecology, with additional specialty courses to total ten formal courses during each summer session. In addition, Field Investigations and Field Biology Seminar are offered each summer. The summer session, 1977, involved 53 different students representing 17 different institutions. The first summer term, 1978, will be held from June 4 to July 8, with the following courses to be offered: Protozoology, Local Flora, Freshwater Algae, Field Ecology, and Ornothology. The second summer term, 1978, will be held from July 12 to August 15 with Parasitology of Aquatic Animals, Freshwater Invertebrates, Biology of the Chironomids, Ichthyology, and Limnology to be offered. The Tennessee Academy of Science has provided $500.00 to Tech Aqua for use as an academic scholarship during the 1978 session. Undergraduate students from any college or university in Tennessee may make application for this scholarship. Inquiries should be addressed to the Tech Aqua Director.

The Tech Aqua Biological Station also serves as a research base for staff and student research in many fields of biology. Currently there are research projects dealing with vegetation description, fish population dynamics, limnology, and mammal population studies in progress. There is no station-sponsored research in progress at present.

Several special programs have utilized station facilities in the past. These programs include:

1. The Career Awareness Institute for minority students interested in fish and game management;
2. The Environmental Education Institute to increase the knowledge of high school and elementary teachers;
3. Special training sessions in field biology for selected educational and professional groups;
4. Short-term visits from many high school and elementary groups for intensive field studies;
5. All the Consortium schools and a few non-Consortium members as well as civic groups use the facilities for field trips or conferences.

In summary, the biological field stations described in this report offer outstanding opportunities for study in different settings. Course offerings and station activities are diverse. The contributions of these stations to higher education in Tennessee should not be underestimated.