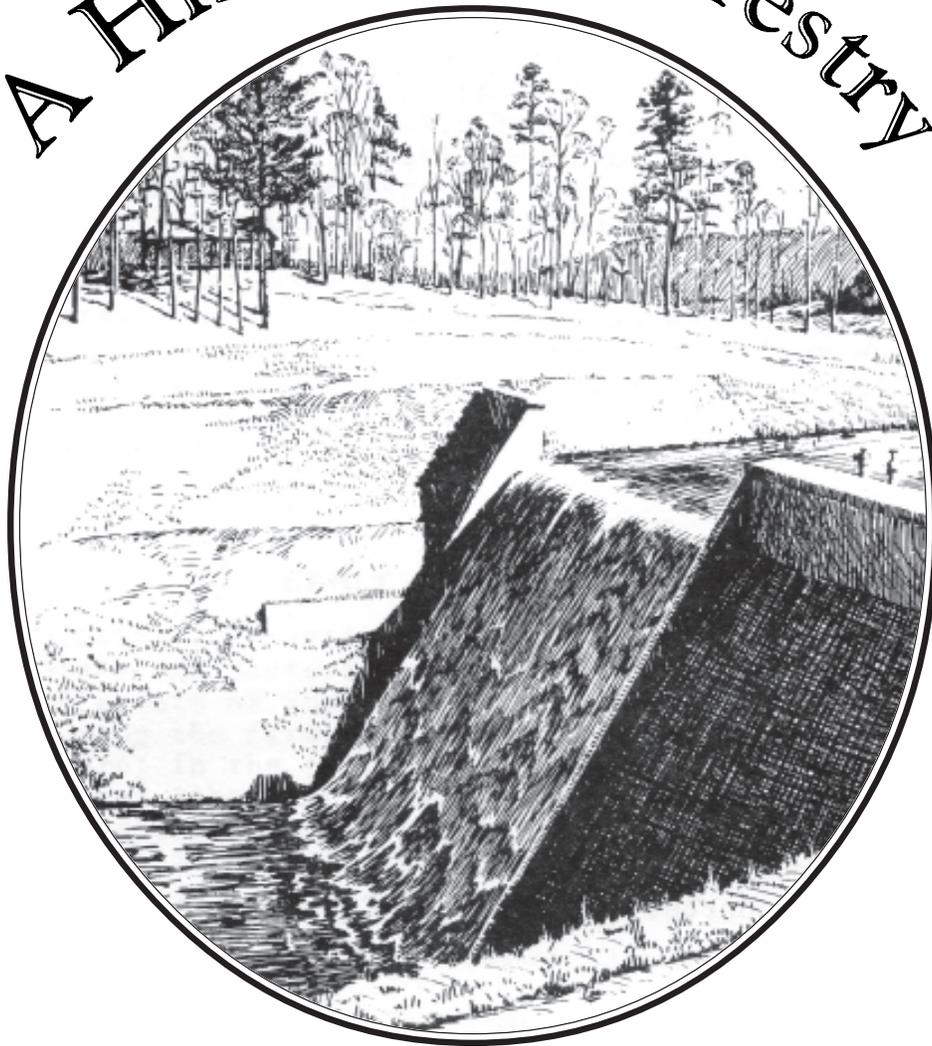


# A History of Forestry



at Clemson University

CLEMSON  
UNIVERSITY

Department of Forest Resources

Technical Paper No. 7

June 1977

Reprinted May 2002

Cover drawing courtesy of the Soil Conservation Service

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# A History of Forestry at Clemson University

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## Introduction

Professional forestry education began in the United States in 1898 with the establishment of the Biltmore Forest School at Biltmore, North Carolina and the New York State College of Forestry at Cornell University. The establishment of these schools ended many years of struggle by foresters and interested citizens to initiate formal forestry instruction in this country. Prior to 1898 a number of institutions of higher learning had offered special lectures in forestry, and the Chamber of Commerce of St. Paul, Minnesota petitioned Congress for 192,000 acres of land which would be used to establish a school of forestry. However, no action was taken on the petition. In the years following 1898, a number of other schools initiated forestry education programs; one of these was Clemson Agricultural College.

## Early Academic Program

Forestry instruction began at Clemson in 1903 in the Department of Botany and Bacteriology and was confined to a single course entitled "Elements of Forestry." Professor Haven Metcalf taught the course. During the first year it was a general two-hour, one-term senior lecture; in the following academic year of 1904-1905, a required two-hour laboratory was added. Although a description of the course was not found in the college catalog until 1906, it was taught during the interval 1903-1906.

The 1906 catalog describes "Elements of Forestry" as follows: "The general principles underlying the practice of forestry are briefly studied and particular attention is given to field work. The taxonomy of the native trees has received considerable attention." In 1906 the course was taught by Professor H. D. House, and in 1907 it was expanded into a two-hour lecture accompanied by a four-hour laboratory and was taught by Professor H. W. Barre. At this time, the catalog description was altered to read, "A lecture, field, and laboratory course dealing with the general principles of forestry together with practical methods of lumbering, forest propagation, and conservation."

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During the academic year 1908-1909, Professor C. H. Shattuck taught "Elements of Forestry," using Green's *Principles of American Forestry* as a text (5). Professor L. I. Knight taught the course in 1909-1910 and was followed by Associate Professor J. G. Hall and Instructor A. B. Massey who taught the course jointly during the academic year 1910-1911. They were succeeded by Professor Barre who resumed his instruction of the course and continued teaching it until 1917.

"Elements of Forestry" as a course was subjected to inconsistencies in nomenclature and varied in importance according to the department in which it was taught. This inconsistency has been described by Mr. M. H. Bruner as follows: "The teaching phase between 1904 and 1935, according to the catalog records, carried an interesting story of vacillation. For example, from 1904-1908, forestry was offered in the Botany and Bacteriology Department; 1908-1910, the department was designated as Botany and Forestry; 1910-1912, it was Botany, Forestry, and Bacteriology; 1912-1918, it again carried the title of Botany and Forestry; but, in 1918 the departmental title was changed to Botany and Bacteriology; this continued until forestry became an independent department in 1956." (3)

Professor D. B. Rosenkrans, using Moon and Brown's *Elements of Forestry*, became the instructor of "Elements of Forestry" in 1917. Professor Rosenkrans continued teaching the course until 1935. During this period, the only major change in the course was the deletion of the laboratory in 1922-1923 when the semester system was adopted at Clemson (4). The laboratory was resumed in 1926-1927, and this laboratory was responsible for establishing many forest stands. One of the oldest loblolly pine plantations in the Upper Piedmont region of South Carolina was established by Professor Rosenkrans and his students.

The first professional forester to teach at Clemson was Professor R. A. Cockrell who received degrees from Syracuse University and the University of Michigan. He was appointed in 1935 to teach the course "Elements of Forestry." Dr. Cockrell established a program that allowed agricultural graduates to acquire a major emphasis in forestry, but this program was later abandoned as impractical. In June of 1936, eight students graduated under this program; however, none were ever employed in the forestry profession.

Professor Cockrell's program was replaced by a proposed pre-forestry curriculum which was to be offered for general agricultural students who were interested in forestry as a career, and two forestry electives were planned. The pre-forestry curriculum was to have included a course in general forestry and one in dendrology in addition to basic subjects, while agriculture electives were scheduled to include courses in woodland management, handling of wood products, and treatment and care of woodlands. None of these courses was taught, and the pre-forestry curriculum was abandoned after Professor Cockrell left Clemson in July 1936 (3).

## **Extension Service**

The Clarke-McNary Act of 1924 provided funds for the creation of a forestry division within the Cooperative Extension Service. In that year, utilizing funds provided by this Act, Clemson employed Mr. H. H. Tryon as the first Extension Forester for South Carolina.

Mr. Tryon formulated programs and demonstrations to teach forestry practices to small forest landowners and was a pioneer in initiating efforts to control wildfires, which were common throughout the state. Until his resignation in 1927, Mr. Tryon led crusades against wildfires in South Carolina, and he established basic measures to be used in controlling them. Largely as a result of these crusades and the support of progressive lumbermen and citizens, the South Carolina State Commission of Forestry was established (3).

After Mr. Tryon's resignation, the position of Extension Forester was vacant until Mr. D. K. Brewster was appointed in 1938. Mr. Brewster served only six months, after which Mr. M. H. Bruner was hired in 1939. The position of Extension Forester has been filled continuously since the appointment of Mr. Bruner. In 1939 the first Assistant Extension Forester, Mr. Charles Ross, was employed. Mr. C. W. Hall, 1945-1971, and Mr. S. A. Marbut, 1946-1976, served as Assistant Extension Foresters.

The principal task of the Extension Forestry Staff at Clemson, according to Mr. W. J. Barker (Figure 1), who served as Extension Forestry Leader from 1942 until his retirement in 1972, has been "to serve as a link between research and the public. Various methods, including personal correspondence, demonstrations, and publications, are employed to inform forest landowners throughout the state about forestry developments. In order to accomplish this, the extension forester must spend 70 percent of his time working with forest landowners in the state." After Mr. Barker's retirement in 1972, Dr. G. D. Kessler became Project Leader of the Extension Forestry Staff.



*Figure 1. Mr. W. J. Barker, Extension Project Leader at Clemson College, 1942-1972.*

## **Clemson Land-Use Area**

Prior to 1930, the land in upper South Carolina was intensively row-cropped; soil productivity decreased gradually to a point where the land was classified as submarginal (Figure 2). There existed widespread farm abandonment, tax delinquency, a barely subsisting rural population, and inferior educational opportunities. Dr. G. H. Aull, Assistant Director of Research for the South Carolina Experiment Station, and Dr. H. W. Barre formulated a proposal in 1933 entitled "The



*Figure 2. A partially abandoned field in Upper South Carolina, 1930.*

Fant's Grove Community Development Project," which was inspired by President Franklin D. Roosevelt's "fireside chats." The proposal utilized the Land Policy Section of The Agricultural Adjustment Administration which was established for the purpose of "retiring" submarginal land from agricultural use and developing these lands into "multiple-use" projects, and the Resettlement Administration which had the federal mandate for relocating families off submarginal lands by purchasing their farms and resettling them on productive land.

The "Fant's Grove Community Development Project" included plans for the purchase and complete revitalization of approximately 75 farms and the relocation of these families to nearby areas which had better opportunities for farming. The project proposed reforestation and pasture development; erosion and stream pollution control; recreation development; and restoration of historic buildings. The proposal was submitted to Washington and, because it was "too modest," it was returned unapproved.

The proposal was revised, expanded, and resubmitted in 1934 under the title "The Clemson College Community Conservation Project," and the project area was increased to 35,000 acres. The proposal listed Clemson Agricultural College as the agency which would lease and manage the project area when the planned developments were completed. It was submitted with the approval and signature of Clemson President E. W. Sikes. In addition to the developments included in the original Fant's Grove Community Development Project, the revised proposal contained provisions for fish hatcheries, game sanctuaries, and botanical gardens. The Clemson College Community Conservation Project (Figures 3 and 4), or the Clemson Land-Use Area as it came to be known officially, was approved by the federal government on August 7, 1934. Dr. Aull was appointed as the first Project Manager. During the period 1934-1938, the federal government purchased 27,400 acres of submarginal land. Reclamation of these lands began under the supervision of Dr. Aull, and in conjunction with the Works Progress Administration (Figure 5). The revitalization and development of the project area provided jobs for hundreds of unemployed individuals during the depression of the 1930's. These workers were responsible for the development of the Lake Issaqueena Recreation Area and for the construction of more than a dozen picnic shelters (Figure 6); a boathouse (Figure 7); a council circle (Figure 8); a bathhouse (Figure 9); miles of roads, fire breaks, and hiking trails; bridges (Figure 10); six fish ponds (Figure 11);

# NORTHERN AREA



Figure 3. Development Plan for the Northern Area of the Clemson College Community Conservation Project, 1936.



two 100-foot fire towers (Figure 12); Issaqueena Dam (Figures 13 and 14); reforestation (Figure 15); erosion control (Figure 16); and the stocking of the 117-acre Lake Issaqueena with fish.

In 1936 Dr. Aull returned to the South Carolina Agricultural Experiment Station, and the position of Supervisor of the Land-Use Project was filled by Mr. Charles Nuite (Figure 17), the first forester on the project. Mr. Nuite directed the reforestation of over 5,000 acres and was succeeded by Mr. C. W. Rentz of the Soil Conservation Service who continued the reclamation of the area (Figure 18).



Figure 5. Dr. G. H. Aull (left) and Attorney R. K. McLeod (right) present a check to Mr. P. B. Gailey for the purchase of his land which was the first tract bought for the Clemson Land-Use Project, 1934.

Unfortunately, during the interval 1934-1939, several members of the Clemson College Administration opposed the Land-Use Project. They felt that the administration of 27,000 acres of sub-marginal agricultural land would become burdensome. Dr. Aull, with the support of most members

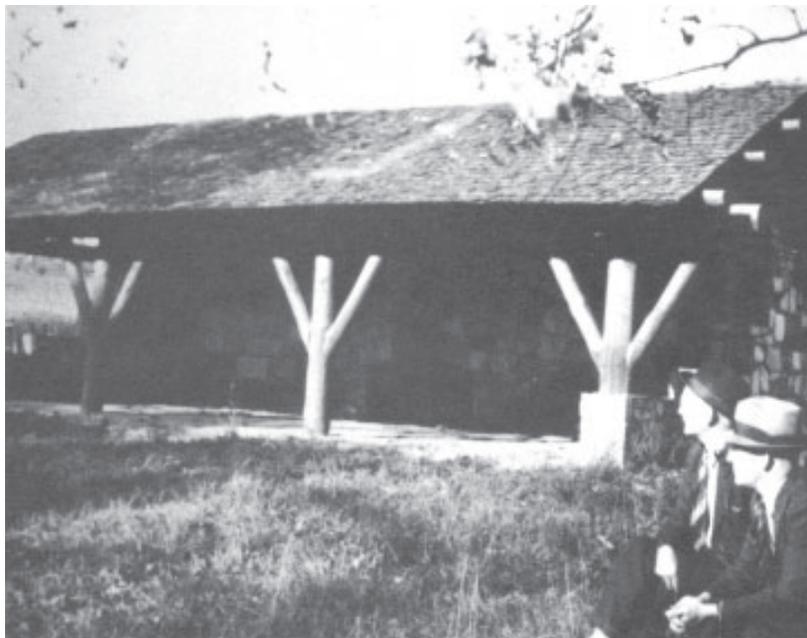


Figure 6. Picnic shelter in Lake Issaqueena Area. Built by WPA.

on the College Board of Trustees, including the Honorable Christie Benet, Mr. W. B. Barnett, Mr. W. W. Bradley, and the Honorable Edgar A. Brown, succeeded in persuading the College administration to accept the land with the provision that the legislature allot an annual appropriation of \$10,000 for its operation (1). On December 9, 1939, Clemson College entered into a 95-year cooperative agreement with the federal government. According to the terms of the agreement, Clemson College would submit quarterly and annual reports to the



*Figure 7. Stone boathouse on Lake Issaqueena.  
Built by WPA, 1937*

bridges washed out, picnic shelters deteriorated, trails became overgrown, and tree plantings were neglected (Figures 20 and 21).

According to the July 20, 1941 issue of the Anderson Independent, Lake Issaqueena

... which was completed as a WPA project, was originally designed as a swimming, boating, and fishing place. As it has worked out, however, it has been satisfactory for none of these. The water, instead of being crystal clear, has remained murky and, therefore, unsuited for swimming. The fishing, too, has not been good; and the College can't afford to keep a set of lifeguards for an occasional individual who might want to take a boat ride on the lake.

The park is open now; but roads are in bad condition, some bridges are missing and picnic grounds are not being kept up. The stone bathhouse and a sand beach built at one section of the lake have never been used and probably never will.

Efforts have been made over a period of years to clear the lake by draining it; but, after the first rain, the water becomes muddy again...

Soil Conservation Service on the progress of reclamation; the federal government would retain mineral rights on the land; and the receipts from timber sales would go into a general fund administered by the College.

Mr. D. J. Watson, Superintendent of Campus, Roads, and Buildings, and Dr. H. P. Cooper, Dean of the School of Agriculture, were given charge of the Land-Use Area despite the fact that neither had been trained in administering such an extensive acreage. Shortly after the lease began, Mr. Watson set up a sawmill at Cherry Farm for the purpose of cutting lumber for college construction, and sporadic logging continued on the Land-Use Area until Mr. N. B. Goebel was appointed Forest Manager (2).

During the period of 1939 through 1945, rampant vandalism and neglect occurred on the Land-Use Area. In the Lake Issaqueena Recreation Area, the boathouse was destroyed (Figure 19), the bathhouse burned,



*Figure 8. Council Circle overlooking Lake Issaqueena. Built by WPA, 1935*

During this period Clemson College relinquished control of the northern portion of the Land-Use Area to the Defense Department. Bombers stationed at Donaldson Air Force Base in Greenville, South Carolina, and from other bases, used the area as a practice bombing range. A 135-acre tract was cleared for the bombing range, and targets were floated in Lake Issaqueena. During bombing practice, one hundred pound bombs which were composed of 95 percent sand and five percent black powder were used. A military contingent was stationed in the north

area to patrol and regulate its use. The contingent was quartered in the Ramsey House which overlooked the Keowee River.

It was not until 1947, with the appointment of Mr. N. B. Goebel (Figure 22 ) as Forest Manager, that true management of the Land-Use Area began. Mr. Goebel was originally appointed in 1946 as a research forester in the Department of Botany and Bacteriology, but was instructed by Dr. R. F. Poole, President of Clemson College, to become Forest Manager of the Clemson Land-Use Project. Under Mr. Goebel, an inventory of standing timber was made, an extensive management program was established, and a cutting budget prepared.

With the help of Dr. Koloman Lehotsky (Figure 23), who was hired in 1947 as a forestry professor, Dr. A. C. Matthews, a botanist, and two student assistants, the Land-Use Area was cruised; and aerial photographs were used



*Figure 9. Stone bathhouse on Lake Issaqueena. Built by WPA, 1938.*

to establish boundaries, delineate compartments and name divisions. The first stand map was prepared by Dr. Lehotsky in 1949 on the northern portion of the Land-Use Area. Mr. Goebel prepared stand maps on the remaining forest area, made improvements in the Lake Issaqueena Recreation Area, thinned stands, and controlled fires. In 1949 there was no market for pulpwood in the Clemson area, and Mr. Goebel negotiated an arrangement with Champion Paper and Fiber Company of North Carolina to market products from the Forest. The first railroad car of pulpwood was sold to Champion on June 5, 1950. (Figures 24 and 25) .June 5, 1950. The wood scaled 13.18 cords, and the stumpage price received was \$2.35 per cord.



*Figure 10. Triple-arched stone bridge spanning Six Mile Creek. Built by WPA, 1939.*

Mr. C. R. Daniel, a member of the Clemson College Board of Trustees, was instrumental in changing the leasing of the Land-Use Area to outright ownership by Clemson College. On December 22, 1954 a bill introduced by Senators Strom Thurmond and C. R. Daniel was passed which deeded 27,000 acres of land to the College for a token purchase price of one dollar (Figure 26).

In 1956 the Hartwell Dam Project was initiated, and this project resulted in the first major reduction in the acreage of the Land-Use Area. The Hartwell Reservoir eventually inundated 7,667 acres, of which 5,626 acres were in bottomland forest (Figures 27 and 28). Timber salvage operations began in May 1956



*Figure 11. Fish ponds built by WPA, 1935.*

and continued through July 28, 1958 and resulted in the removal of 11,715,479 board feet of timber (2). Timber which could not be salvaged before that date was sold to the Army Corps of Engineers.

Mr. Bruner (Figure 29) became Manager of the Land-Use Area in 1957 and held this position until his retirement in 1970. Upon Mr. Bruner's retirement, Mr. L. D. Reamer, the present Forest Manager, was appointed to the position.



Figure 12. The Issaqueena Tower constructed by the WPA, 1936

## Revival of the Academic Program

In 1946 the academic forestry program was revived with the appointment of Dr. H. L. Hanson to the Department of Botany and Bacteriology, but he resigned in 1947; Dr. Koloman Lehotsky was hired to fill the position. Dr. Lehotsky taught "Dendrology" and "Introduction to Forestry." The newly established two-year pre-forestry program permitted students to transfer to a forestry school of their choice at the beginning of their junior year. Dr. Lehotsky also taught a course entitled "Farm Forestry" as an elective for students enrolled in Agriculture.



Figure 13. Issaqueena Dam. Built by WPA, 1936.

A forestry arboretum was established by Dr. Lehotsky in 1951. Dr. Lehotsky began the arboretum with gifts from Mr. J. A. Gibbs, Regional Forester for the Soil Conservation Service in Spartanburg, and with plants he raised from seeds in his garden. In 1958 when the arboretum site was chosen for a student housing project, it was moved by Mr. Goebel to its present location off Perimeter Road.



*Figure 14. The Issaqueena Dam, completed by the WPA in 1936. Photograph taken in 1939.*

With the help of Dr. M. D. Farrar, Dean of Agriculture, Dr. Lehotsky received assurances from the College Board of Trustees that the new 75-acre arboretum site would remain undisturbed except by action of the Board of Trustees. Mr. Goebel became Manager of the relocated arboretum and was succeeded by Dr. R. E. Schoenike in 1969. The arboretum has served as an aid in the instruction of Dendrology and for testing the adaptability of species to the Clemson area (Figure 30).

In the fall of 1956 a Department of Forestry was established in the School of Agriculture. Dr. Lehotsky was appointed Department Head and, in the same year, Mr. Bruner, who had been in charge of the Land-Use Project since 1954, joined the faculty of the new Department. The staff was expanded in 1958 with the appointments of Dr. B. M. Cool and Dr. C. O. Minor.

The forestry curriculum was expanded in 1957 to include a four-year program leading to a



*Figure 15. Area reforested by WPA, 1939.*

Bachelor of Science degree in Forest Management. In 1959 the first class, containing seven students, graduated under the new professional curriculum (Figure 31). Courses taught during the first academic year of the four-year program included Forest Mensuration, taught by Dr. C. O. Minor; Forest Economics, taught by Mr. L. M. Bauknight; Silvics and Introduction to Forestry, taught by Dr. R. D. Shipman; Forest Protection and Farm Forestry, taught by Mr. M. H. Bruner; Silviculture, taught by Dr. Koloman Lehotsky;



*Figure 16. WPA workers planting kudzu for erosion control.*

Wildlife Management, taught by Dr. L. G. Webb; Entomology, taught by Dr. E. W. King; Forest Policy, taught by Dr. J. R. Warner; Photogrammetry, taught by Professor J. P. Rostron in Civil Engineering; and Wood Technology, Forest Products, Logging and Milling, Management Plans and Regulation, taught by Dr. B. M. Cool. A summer camp program was initiated and conducted on the Land-Use Area. The Class of 1959 organized the first Forestry Club at Clemson with Mr. Carl Dalton, the Assistant Forest Manager, serving as its

advisor. Although no regional conclave was held at that time, there was a field day competition among the Forestry Club members. In 1962 the Department achieved a major accomplishment by being provisionally accredited by The Society of American Foresters. Clemson College officially changed its title to Clemson University in 1964, and during this same year, the Department of Forestry's accredited status was changed to permanent. Dr. Lehotsky resigned as Department Head in 1969, and Dr. W. H. D. McGregor became Head of the Department.

The forestry faculty, in conjunction with the University administration, was successful in gaining approval for a graduate program for the Department in 1965. This graduate program offered a Master of Science Degree and, in 1966, Mr. L. D. Reamer received the first graduate degree awarded in forestry at Clemson University. In 1970 the graduate program was expanded by the addition of a professional degree.

The early 1970's saw many major advancements in the forestry program at Clemson University. In 1970 the Board of Trustees



*Figure 17. Mr. Charles Nuite, first forester to assist with the Clemson Land-Use Project.*



*Figure 18. Typical erosion problem which existed on land purchased by the Resettlement Administration.*

created the College of Forest and Recreation Resources by combining the Department of Forestry, which was located in the College of Agricultural and Biological Sciences, with the Department of Recreation and Park Administration, which was located in the College of Education. Dr. W. H. D. McGregor was appointed Dean of the new College, and Dr. R. M. Allen became Head of the Department of Forestry. A Wood Utilization Curriculum was initiated in 1973. This Curriculum expanded the Department's academic

program by enabling forestry students to receive a Bachelor of Science degree in Wood Utilization. Dr. T. E. Wooten was appointed Chairman of the Wood Utilization Curriculum, and Dr. J. R. Warner as Chairman of the Forest Management Curriculum. Also in the early 1970's the Department's Belle W. Baruch Forest Science Institute was created at the 17,500-acre Hobcaw Barony near Georgetown. Dr. D. D. Hook and four scientists were employed to investigate the biological productivity of the state's coastal forest. In 1973 construction began on the Forest and Recreation Resources Building, which was occupied in September 1975.

## **Conclusion**

The growth of forestry at Clemson University has paralleled and been a part of the professional development of forestry in the United States. From its beginnings in 1903, when Professor Haven Metcalf taught "Elements of Forestry" to the present, Clemson has refined and expanded its forestry program. Today, the Department of Forestry has wide-ranging responsibilities in the areas of teaching, research, and extension.

The Land-Use Area has been reclaimed and now serves the State of South Carolina as the Clemson Experimental Forest. The area is intensively managed and supports multiple-use, teaching, and research programs. The Clemson Experimental Forest is providing a sustained yield of timber, water, and wildlife; the tree plantings are maturing; the eroded areas have been vegetated; and the Lake Issaqueena Recreation Area is providing outdoor recreation opportunities.

Forestry is an integral part of the economic and social structure of South Carolina. This has resulted from the abundant forest resources of the state and, in part, from the leadership of the Department of Forestry at Clemson University. The Department of Forestry is continuing its efforts to be of service to South Carolina and to the profession of forestry by education qualified foresters, solving forestry problems through research, and service to the people through extension.



*Figure 19. The boathouse built in 1939 by the WPA is now in ruins.*

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*Figure 20. Remains of a picnic shelter built by WPA.*



*Figure 21. Neglected picnic table overlooking Lake Issaqueena.*



*Figure 22. Mr. N. B. Goebel, first Forest Manager of the Clemson Land-Use Area.*

*Figure 23. Dr. Koloman Lehotsky, Forestry Professor and first Head of the Department of Forestry Clemson Agricultural College.*





Figure 24. The first carload of pine pulpwood shipped from the Clemson Land-Use Area to Champion Pulp and Fiber Company in North Carolina, June 5, 1950. The wood scaled 13.18 cords, and the stumpage price received was \$2.35 per cord.



Figure 25. A coordination meeting of Clemson College and Champion Pulp and Fiber Company officials, 1955. From left to right: Mr. T. A. Hargrove, Manager of Champion's Newberry Office; Mr. Ellis Davenport, Champion Timber Marker for the Land-Use Project; Dr. R. F. Poole, President of Clemson College; Mr. M. H. Bruner, Clemson College Forester; Mr. D. W. Morrison, Champion Conservation Forester; and Mr. N. B. Goebel, Clemson College Forester.



*Figure 26. Clemson College President R. F. Poole (right) and Mr. G. H. Hill, Assistant Business Manager, examine deeds transferring ownership of Clemson Land-Use Area from the federal government to Clemson College, January 4, 1955.*



*Figure 27. A typical loblolly bottomland stand which was clearcut prior to inundation by Hartwell Reservoir.*

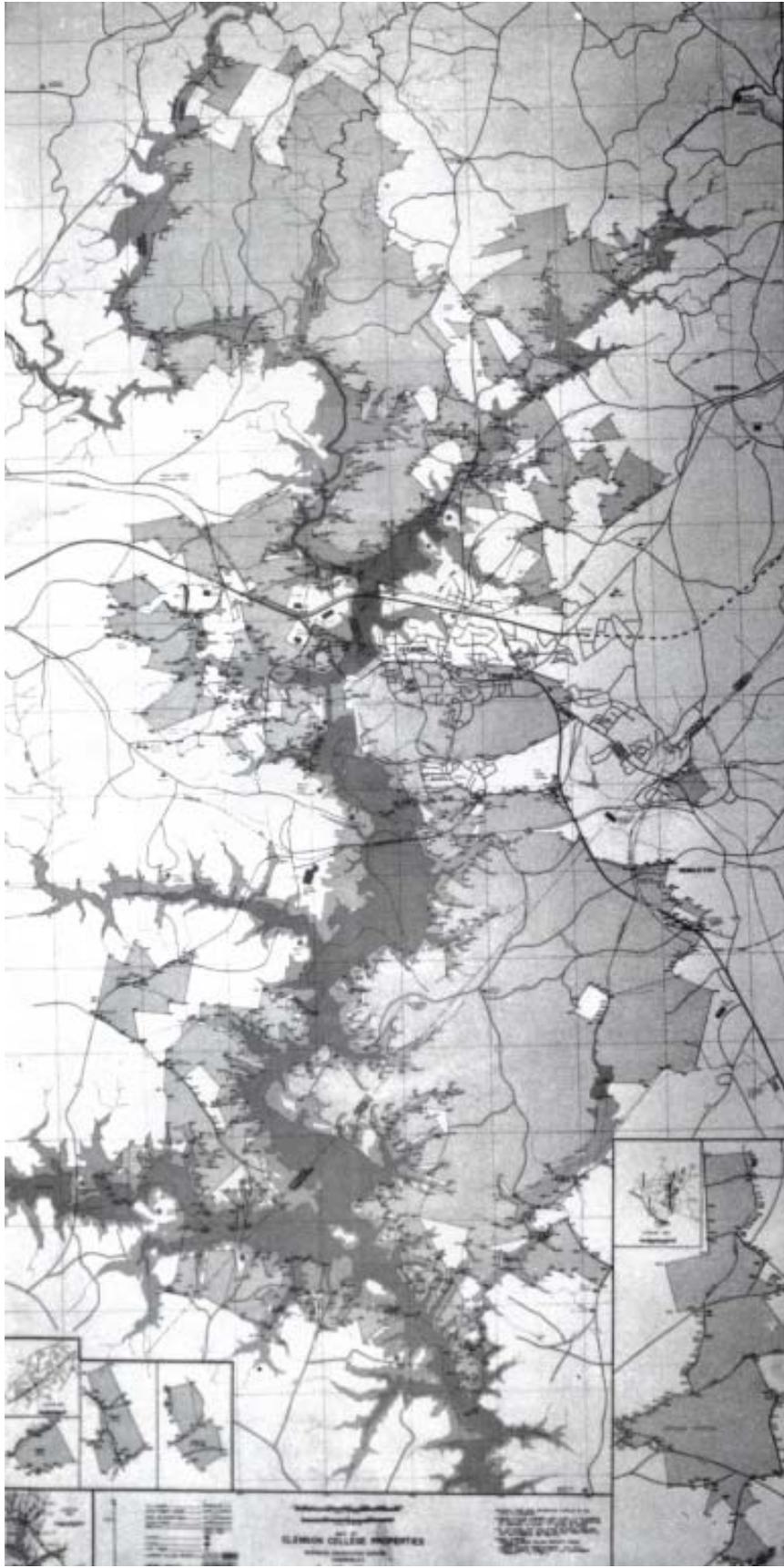


Figure 28.  
Map showing land area  
contained in Clemson Land-  
Use Area. Dark portions  
indicate areas inundated by  
Hartwell Reservoir. 1962.



*Figure 29. Mr. M. H. Bruner, Clemson Land-Use Area Manager. 1957-1970.*



*Figure 30. Clemson University Arboretum, 1975.*



*Figure 31. The first class to graduate from Clemson College with a four-year degree in forestry. Front row, from left to right: Professors R. D. Shipman, B. M. Cool, Koloman Lehotsky, M. H. Bruner, and J. R. Warner. Second row, left to right, are graduates Guy Sabin, William Lawrence, Gerald Adams, Arthur Shearin, Garland Gravely, and William Bruner. (W. Blair Martin was not available for the picture.)*