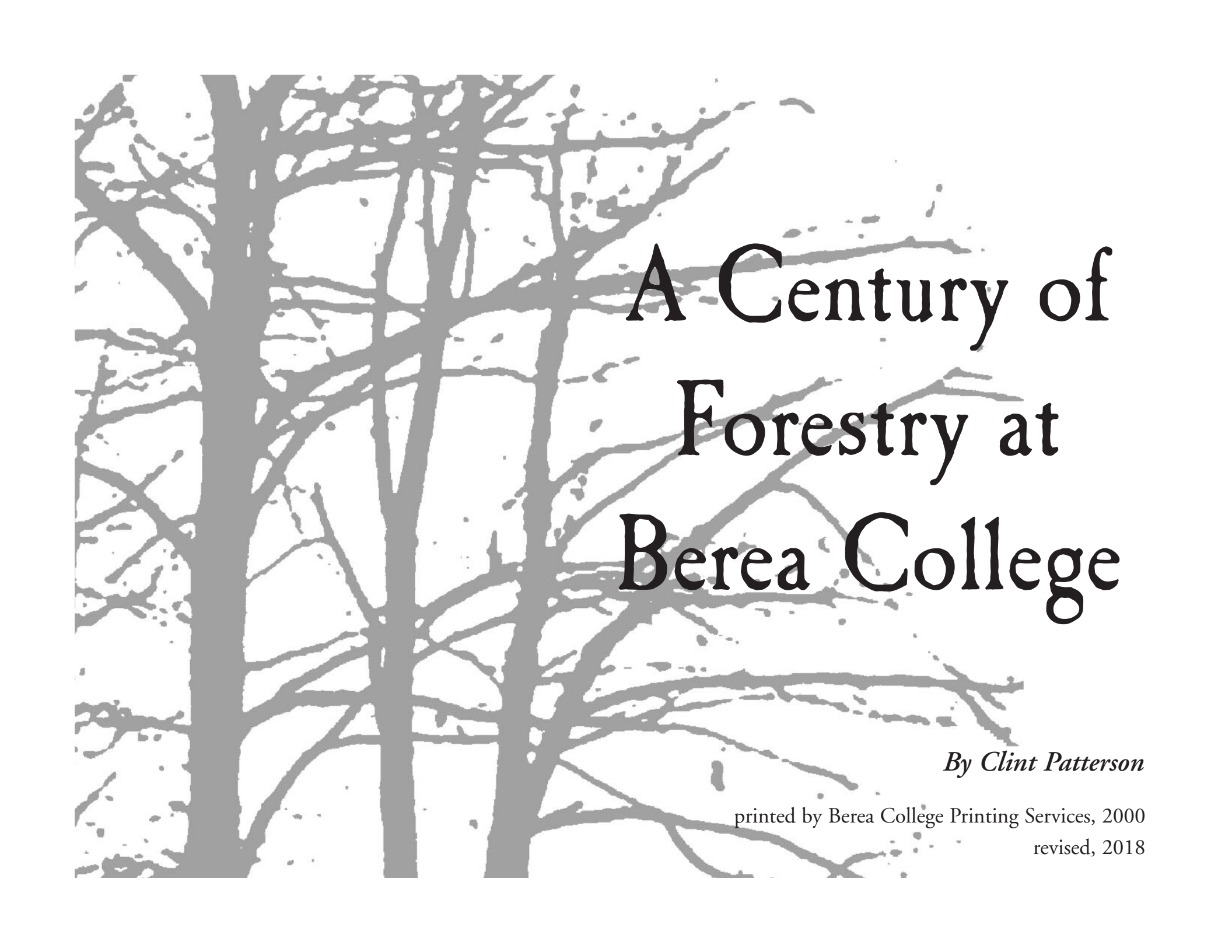


A Century of Forestry

AT BEREA COLLEGE

BY CLINT PATTERSON





A Century of Forestry at Berea College

By Clint Patterson

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Berea College Foresters 1897–present



*Silas C.
Mason*

1897–1918



*Isham B.
Chestnut*

1918–1927



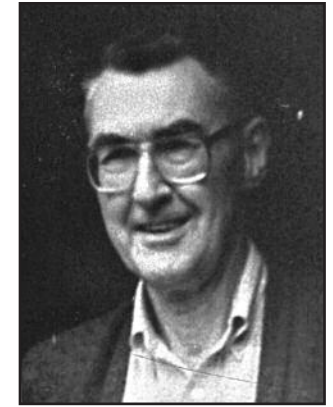
*Howard H.
Harrison*

1927–1947



*Sherman
Whipple*

1947–1958



*David A.
Rock*

1958–1960



*Ben
Hornbeck*

1960–1972



*John F.
King*

1972–1991



*Carl
Marsh*

1980–1991



*John
Perry*

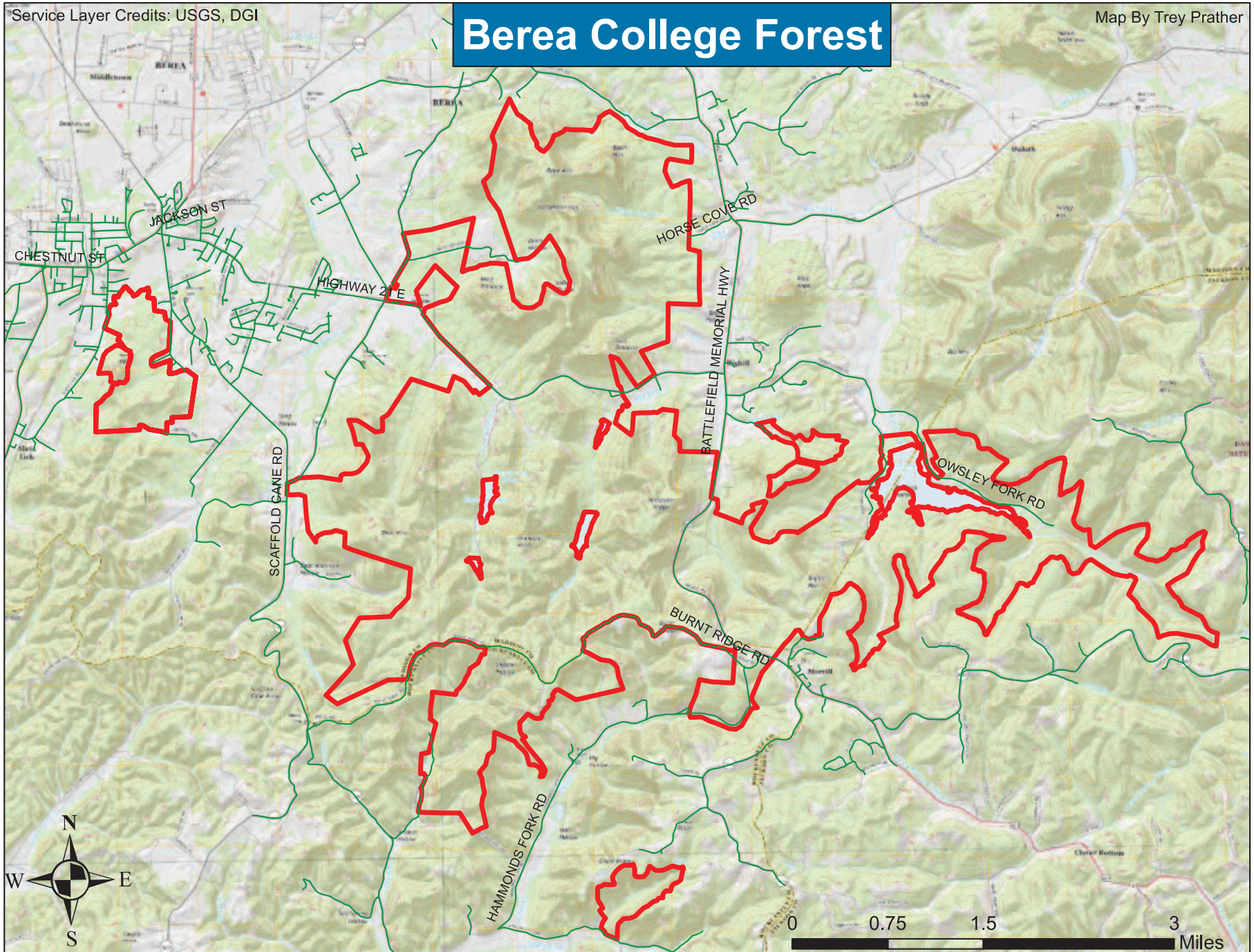
1991–2010



*Clint
Patterson*

2010–

Berea College Forest

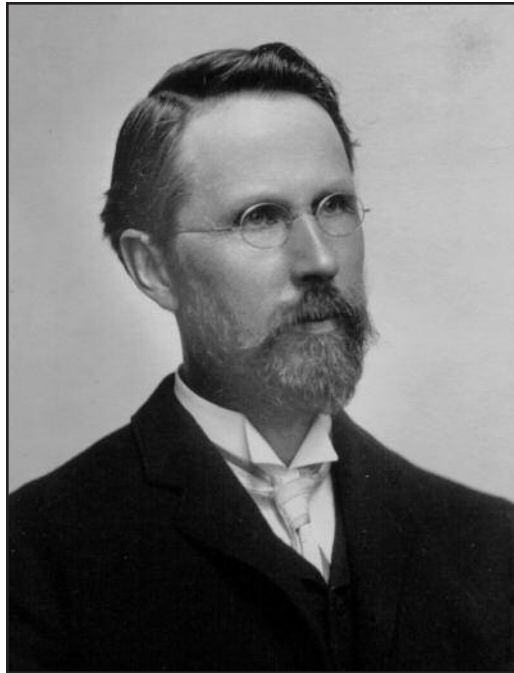


A Pioneering Effort in American Forestry...

In 1897, the same year as the Forest Reserve Organic Act and the beginnings of the first College forestry degree programs in the United States, Berea College initiated a forestry effort.

Professor Silas C. Mason initiated the program in September, 1897. The goals were general forestry education offerings for the students and a source of wood and income for the College. Mason's first step was to take horseback rides through the hills just east of Berea in order to locate suitable tracts of land to acquire. Berea College did not and does not offer a forestry degree program. The forestry, natural resources and biology classes offered through the Agriculture and Natural Resources and Biology Departments have resulted in many Berea students going on to advanced degrees and careers in Forestry, Wildlife Management and other natural resource related areas.





The Pioneer: Professor Mason

Silas C. Mason was a pioneer in American Forestry.

Mason, Professor of Horticulture and Forestry at Berea, had an advanced degree in Horticulture (Kansas Agriculture College, now Kansas State), but lacked today's equivalent of a Forestry degree. He had traveled to Europe to study and observe forestry in France, Switzerland, Germany and Prussia. In 1895, he was offered the position of Assistant Chief of the USDA Division of Forestry (now Forest Service) by Dr. Bernhard Fernow. He published early research on Old Field Forest Growth in 1899 (Central States Forest Experiment Station Archives). While many of the pioneers in American forestry tried to apply European forestry models to North America, Mason realized, "...how different American forest problems are from those of the Old World and how great is our need of the study of the different tree species under conditions most likely to be those of the future."

Forest Land Acquisition

In 1898 Berea acquired its first forest land.

The first tracts of forest land were purchased by Mason from his personal funds. His stated purpose was to have land for the study of forestry by his classes and to provide wood and income for the College. In 1899, Ms. Sarah Fay, (left in photo) of Boston, MA, stepped in as Mason's benefactor, providing funds for land acquisition and his salary. She recognized the benefit of having a continuous block of forest. By 1918, the Fay endowment had provided for the acquisition of 5,400 acres. Allowance was made to use timber incomes to support future acquisitions.





Abused Land

The condition of the land that became the Berea College Forest was similar to most of the land in the Southern Appalachians in the late 19th Century.

The land had been cleared, over-farmed/grazed, burned repeatedly and the forests indiscriminately cut. Even steep land was tilled for row crops. Much of the site quality was low either due to soil erosion resulting from farming or to inherent conditions (e.g. dry, rocky sites). Most of the vegetation cover on the land acquired between 1898 and 1960 was in some early-successional stage due to agriculture (usually), fire and/or logging. Descriptions of the tracts ranged from young tree growth cover to bare soil with erosion gullies. The photo at left (1920s) shows typical hillside farming. This is a 60+% slope just below the cliff line in Davis Hollow. This area now supports a saw timber stand dominated by yellow poplar. Note the high clearance on the sled runners to clear stumps and rocks and the large ear size of the open pollinated corn.



This 1890s picture of the road through Narrow Gap shows the condition of most of the forest land that Berea acquired.

The charred and dead stems from past fires are evident. Most of the trees near the road have been cut for fuelwood, posts or logs. Grass growing within the trees attests to a perennially open condition. Fire control, using faculty, staff and student crews, began as the land was acquired. Many of today's best forest stands (tree size, quality, health, diversity, etc.) resulted from forested areas that were commercially clear-cut just prior to acquisition. Subsequent thinnings have helped such stands.

Shift from Abuse to Management

Forestry management, research and teaching began immediately upon acquisition.



Mason completed a management plan for the Forest in 1907. The plan was reviewed by such American forestry pioneers as Dr. Fernow, Carl Schenck (Biltmore) and Henry S. Graves (Yale). Timber production, recreation and water were management goals. The management of tenant farmers, including “troublesome moonshiners”, was a necessity, as they were already living on the tracts at acquisition. Mason recognized the potential of the land for water production for the College and town of Berea. The “timber jacks” in the picture at left were hauling logs from the College Forest over Narrow Gap to a local mill 1905.



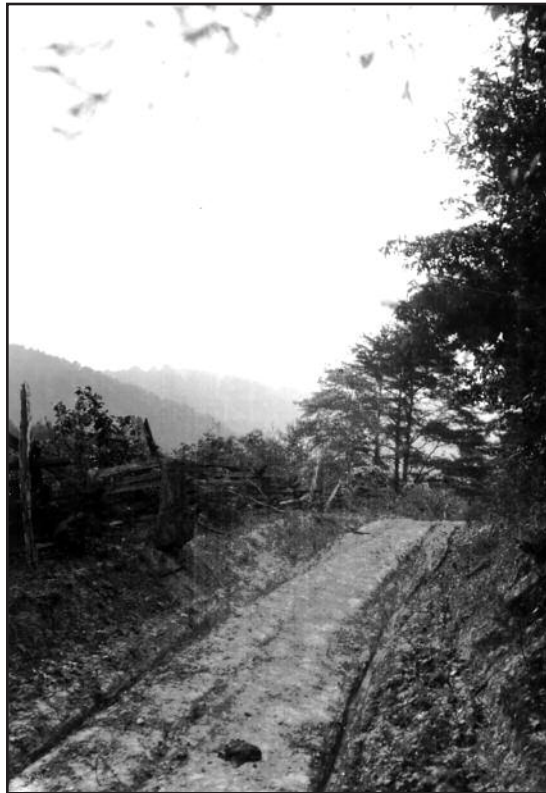
Thinning the abundant pole stands that had regenerated in old fields and harvests was an early task.

This picture was taken around 1905. The trees to be ax girdled were blazed. The archive file containing the picture at the left also contained a closeup of an ax girdle.



Tree seedling production at this nursery began around 1900 under a cooperative agreement with the USDA Bureau of Forestry (Forest Service in 1905).

The nursery was located on Indian Fort “Mountain”. Seedlings were used to reforest old field land. This area is a closed canopy forest now. The College maintained a research relationship with the Forest Service until recently when the Northeast Experiment Station closed its Berea facility.



This pastoral landscape turned to forest under College ownership.

The photo at left is “Cowbell Hollow” near the time of acquisition in 1903. A Forestry Department record from 1937-38 states that “twenty-four year old walnut and poplar plantings in Cowbell Hollow average 10 inches in diameter”.



The change in land use is evidenced by this old field yellow poplar stand.

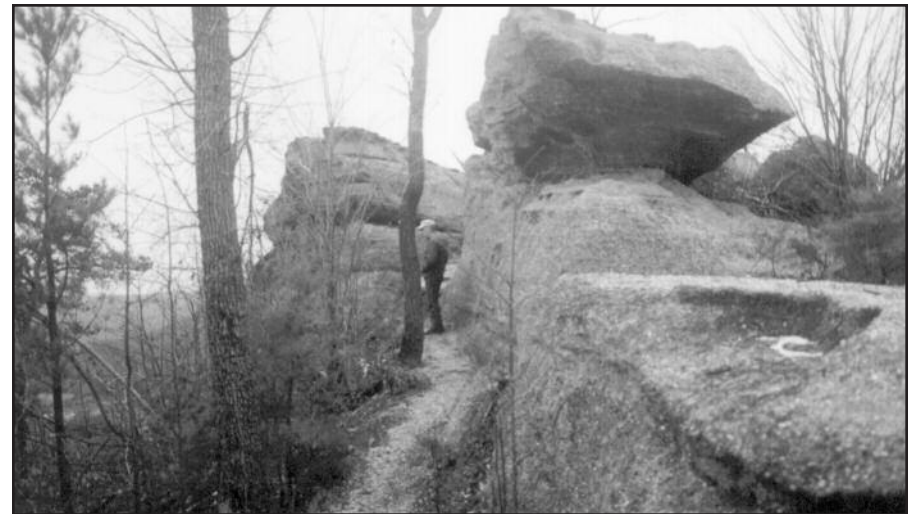
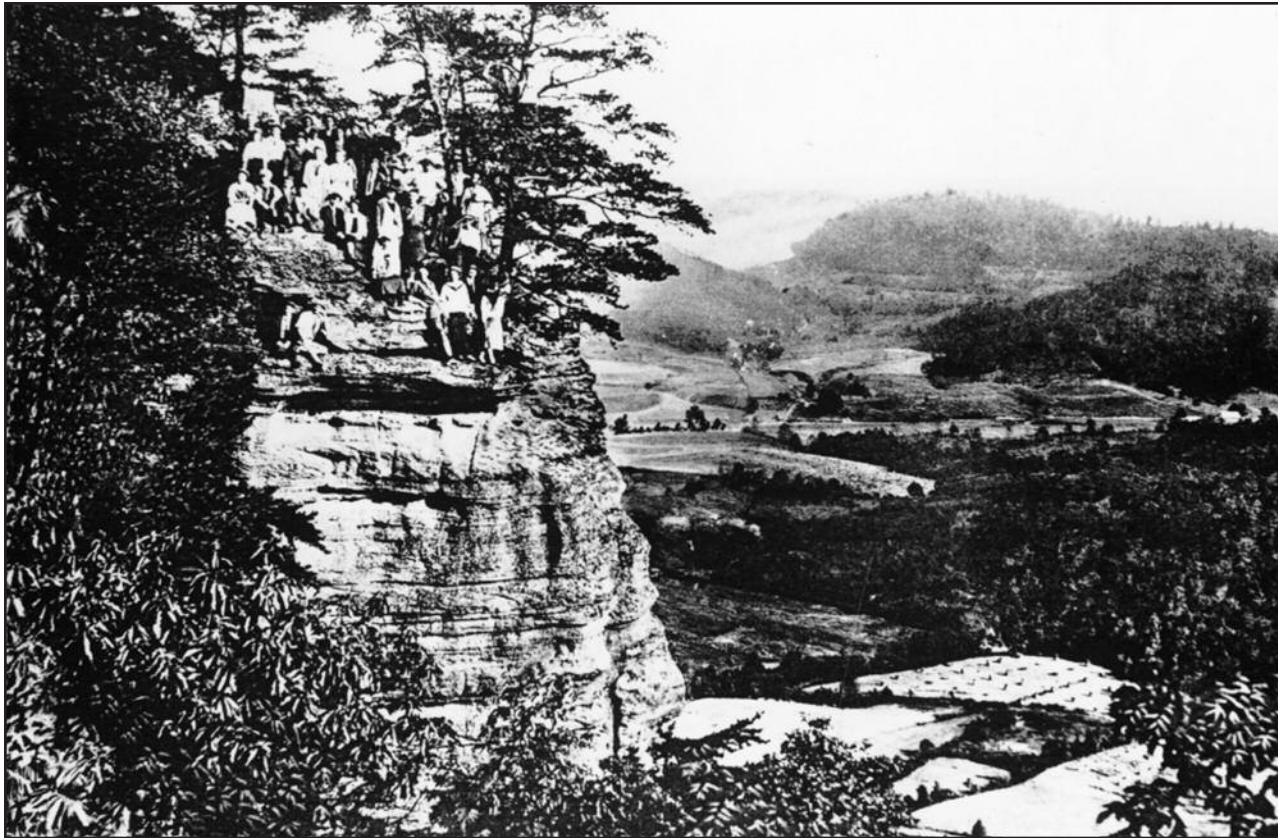
This tract was acquired in the 1960s. The log crib was surrounded by hillside farming over 50 years ago.

Recreation

Recreation was a management goal from the beginning.

Each fall since 1875, Berea students have celebrated “Mountain Day” by hiking in the area of the College Forest. This picture shows students on East Pinnacle on Mountain Day (circa 1900).

The trails, which offer many scenic views, are used year round.

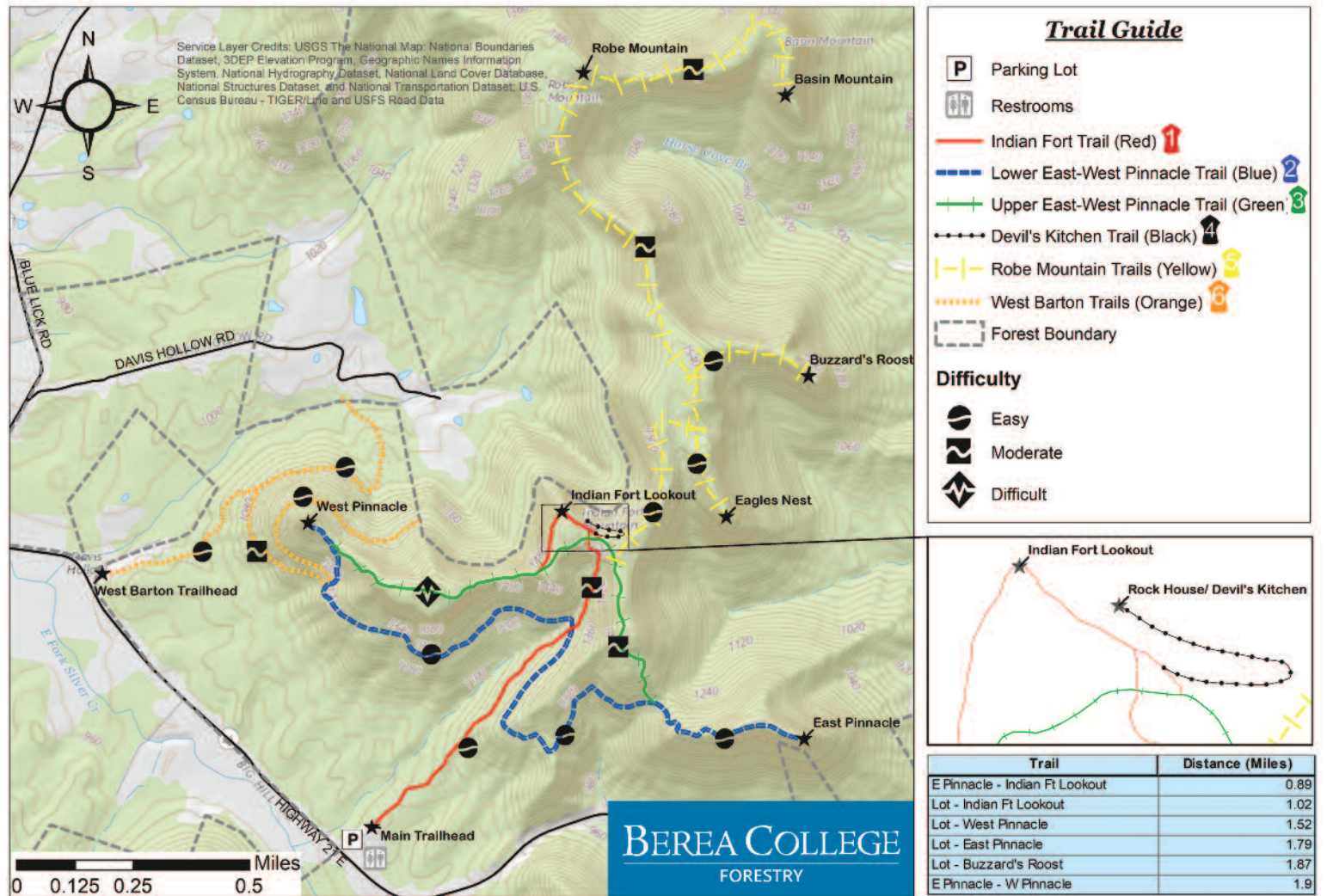


Hiking Trails

Year-round hiking is available to the public.

Up until the 1960s, hikers and logging crews used the same roads/trails for their activities. When all logging roads were open to hikers, more than 20 miles were available. Increased recreational use required separation of timber harvesting and hiking. Currently, some 9 miles of hiking trails are open to the public for day use. Active silviculture takes place along a portion of the trails for education/demonstration access. Some old growth stands also may be viewed.

Indian Ft Mtn Trails At The Pinnacles





Water Production

Water was an initial Berea College Forest management goal.

Water from springs in the Forest began flowing the five miles to Berea by gravity in 1905 and the first reservoir was built in 1920. Four reservoirs and a treatment plant now produce over 1 billion gallons of water annually (2010 data) for Berea and several water districts. The largest of the lakes is Owsley Fork (top left) at 151 surface acres. Water and wood production have coexisted for over 100 years within the main block of the Forest. The 1,300 acres in the Owsley Fork watershed were purchased since 1970.





Cultural Resources

This farmstead is typical of many that dotted the Forest upon acquisition.

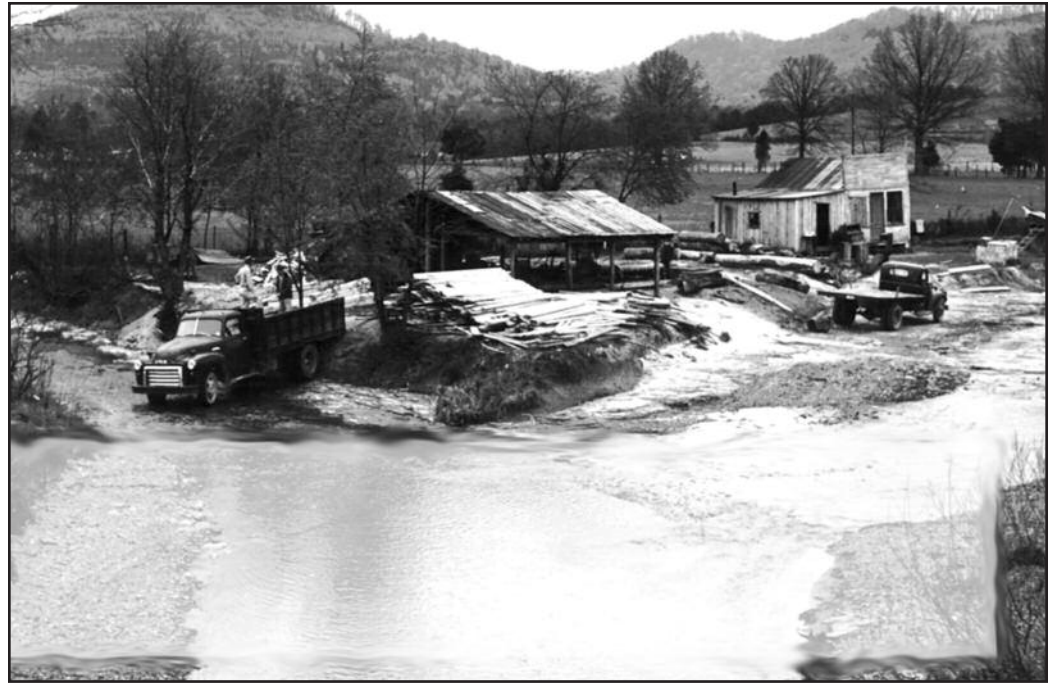
This structure, called “Pigg house cabin”, after its former owners, no longer stands. This photo dates from 1910. The fields shown in this picture now support large trees.

The College Forest contains several sites of archaeological or cultural significance including walls built by the Adena culture (500 BC-500 AD), Civil War sites and rock shelters like “Devil’s Kitchen” (right).



Timber Management

The privately run sawmill near the Forest (pictured at right) was a destination for sawlogs. The haul road goes through the creek. The creek is used to dispose of sawdust and slabs. By this time, most old field and harvest sites had begun to reach saw timber size. Wood output in 1949 was 165,000 board feet (BF) saw timber, 593 cords of pulpwood, 10,228 fence posts (locust & chestnut), 2,000 hickory handle billets, 2,100 mine props, 100 tobacco barn tier poles, and 46 cords of fuel wood. Increases in harvest levels began in 1945 under a management plan revision.



Worst management practices for sawmill operation, 1950s.



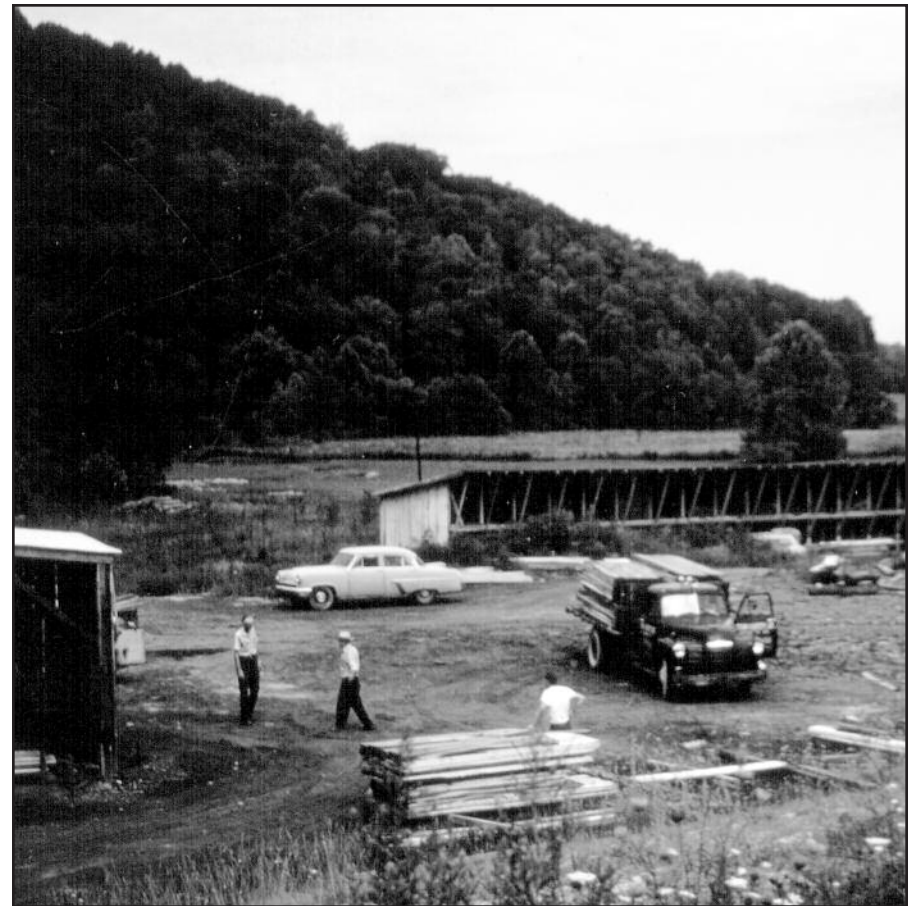
By 1954, annual saw timber harvest was above 200,000 BF. Prior to 1945 there were average annual harvest levels of around 100,000 BF of saw timber. However, salvage of dying chestnuts pushed harvest levels as high as 300,000 BF for a few years in the 1930s. The College not only sold the stumpage and logs, but also produced some lumber for construction, furniture, crafts, etc. The College crafts industry, which includes wood furniture and crafts sales, began in 1893. The photo at left illustrates men working in the College Woodcraft, circa 1950s.



This 28" DBH (diameter breast height) black oak was 90 years old when cut in 1995.

The sale of timber supports the Forest operations. In 100 years, 5,000 acres of forest have produced some 16 million board feet of saw timber and a tremendous amount of other wood products. This is a large quantity, given that most of that land was acquired in an old field or just harvested condition (1898-1960).

Following implementation of a sustained-yield management plan, the College ran its own sawmill from 1960-70. This mill was donated by Corley Manufacturing. That period saw an annual cut of 800,000 BF. The complexity of the sawmill business did not fit the College well and the mill was sold. The sale of the sawmill, lumber and equipment supported the Owsley watershed acquisition. Timber production was suspended until the mid 1980s. Current annual harvest levels are in the 500,000-750,000 BF range and have both timber and wildlife management goals.





Egalitarian Forestry

Berea College's forestry initiative was perhaps the first in the United States launched within an egalitarian framework.

Berea College, located on the edge of the Cumberland Plateau in Berea, KY, was established in 1855 by Christian anti-slavery activists to offer education to both whites and emancipated slaves.

Intensively managed black walnut plantation at Owsley Fork, 1996.

In 1897, Berea College was a unique private college, especially for the American South: interracial, coeducational, and tuition-free to qualified, but economically disadvantaged, students. Additionally, the College already had made a commitment to serve the great need for education in the Southern Appalachian Region. In 1897, forestry practice had mainly been the province of the wealthy (e.g. Biltmore Estate) or the government.



Adaptive Management

Pink lady's slippers are dependent on acid pine litter on the toe slope sites.

This shortleaf pine stand in Davis Hollow is over 100 years old and has been favored by a past commercial thinning. It is an even-aged, old field stand with a history of fire. However, most of the harvests on the Forest prior to 1984 have been single tree and group selection. This has led to a decrease in certain tree species, shortleaf pine being one. We now understand that pre-European settlement, native American fire use and agricultural practices resulted in landscapes of varied vegetation cover, including even-aged stands, and favored pyrophytes like shortleaf pine, oaks and chestnut.

To some extent, early (pre-industrial) settlement practices of fire use and land clearing gave similar results. Selection harvests (and fire protection) have discriminated against such conditions. Even-aged silviculture and control of shade tolerant species is currently being used to restore such communities. Prescribed fire has not been used, but is being considered for future management. Limited restoration of grassland (prairie, savanna, etc.) communities is also being done.



Student Labor

Student labor always has been important in management of the Forest.



The tuition-free education at Berea College is dependent on the student labor program. Above, students are sawing lumber from Berea College Forest for a building project. Integration of labor and learning is a goal of the College.

Left: Students helping build timber frame with wood harvested from Berea College Forest.



*Clint
Patterson
leading class
in invasive
species control
demonstration*

*Mule logging on
Berea College
Forest, 2011*



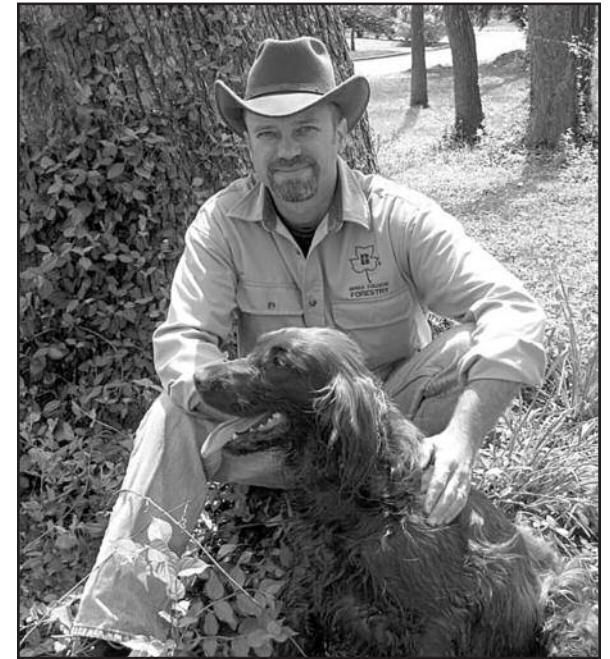


2018 Forestry staff (left to right): Clint Patterson, Forester; Glen Dandeneau, Assistant Forester; Trey Prather, Forestry Technician; Wendy Warren, Forestry Outreach Center Coordinator.

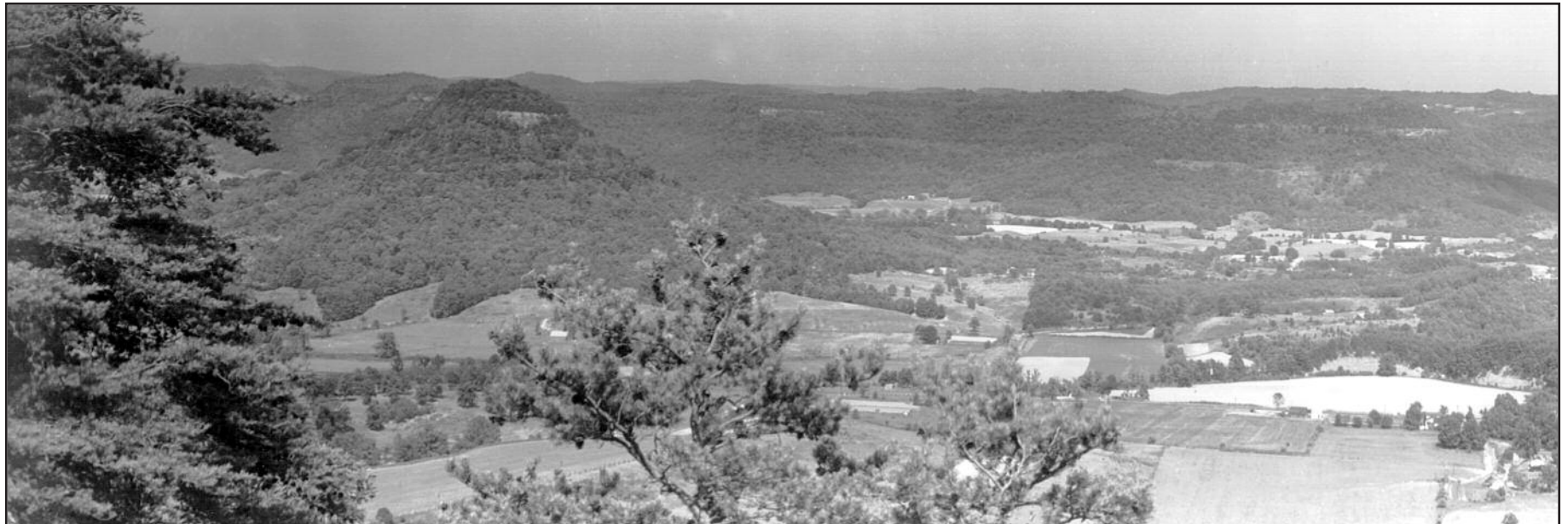
Summary

Berea College currently manages 9,000 acres of forest land and offers both classes and outreach programs related to forestry.

Education/demonstration serves as the structure for the management goals of wood, water, wildlife and recreation. The forestry effort began at the dawn of the American conservation movement. A small private College with egalitarian ideals has provided a unique setting for this. Berea College continues to offer low-cost education to capable students with limited financial resources. There is still a commitment to the Southern Appalachian Region. Now we are beginning the second century of forestry practice in the United States. The period is marked by contentious debate over forest management. Perhaps, the greatest value of the Berea College Forest is as a resource to demonstrate and evaluate the results of long-term forest management in the Southern Appalachian Region.



Clint Patterson





Owsley Fork Reservoir



This booklet was originally developed at Berea College by John Perry, former Berea College Forester, with assistance from Forester John (Scotty) King. Design and production were by Christopher Miller and Gwen Brunner Hensley. Warren Brunner contributed some of the photographs and underwriting. Historical photographs came from the Berea College Hutchins Library Special Collections. Booklet has been updated by Clint Patterson, current forester.