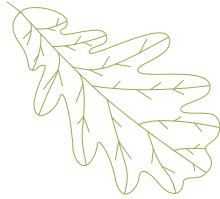


# *The Berea College Forest Horse Program: A Traditional Approach to Modern Forest Management*

by Clint Patterson  
and  
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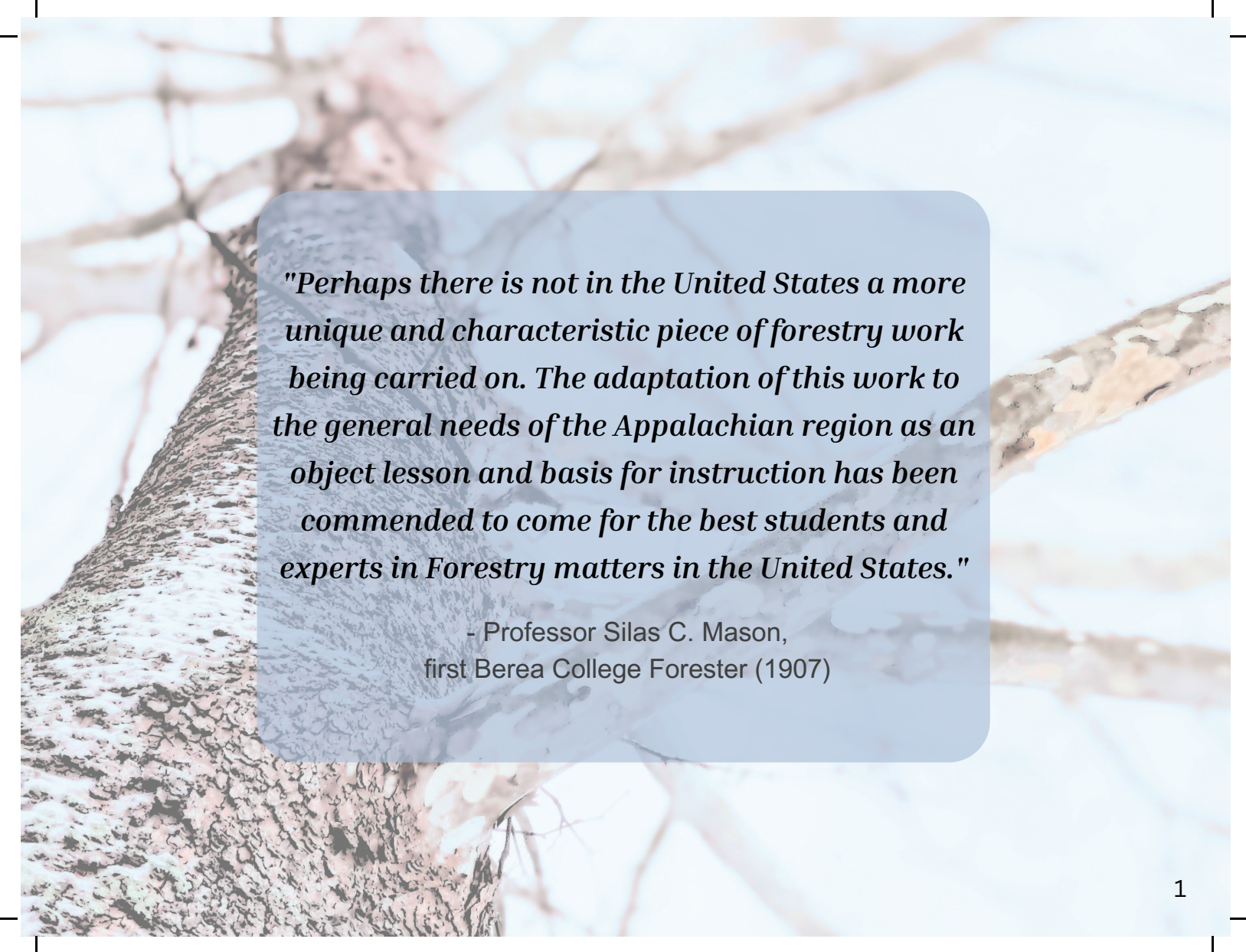
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*"Perhaps there is not in the United States a more unique and characteristic piece of forestry work being carried on. The adaptation of this work to the general needs of the Appalachian region as an object lesson and basis for instruction has been commended to come for the best students and experts in Forestry matters in the United States."*

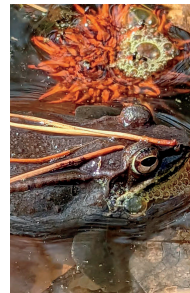
- Professor Silas C. Mason,  
first Berea College Forester (1907)



# The Berea College Forest: A Pioneering Effort in American Forestry...

The conservation challenges and opportunities we face today have changed since 1897, when the Berea College Forest program was initiated, but the original vision for the Berea College Forest remains compelling; forestry that tends to the spiritual, intellectual, material, and ecological needs of a local community can become a model of stewardship that reaches beyond the borders of the College Forest.

The Berea College Forest is the oldest privately managed forest in Kentucky and is one of very few forested watersheds in the USA, managed since its inception to provide high-quality drinking water to the College and surrounding community. For over a century, foresters have guided the restoration of exploited farmland and cut-over timberland into a healthy, biodiverse forest. Today, a team of foresters continues this effort using the art and science of forestry to steward over 9,000 acres of forestland with a focus on ecological restoration and sustainability.







Berea's water source, Owsley Fork Reservoir

We ensure sustainable management through external certification by both the Forest Stewardship Council and the American Tree Farm System, and through enrollment in a carbon program, which positions the Forest as a carbon sink and a contributor to the global efforts to curb climate change.

Berea College Forest management goals focus on ecological restoration, sustainable timber harvesting, watershed protection, wildlife habitat improvement, education and recreation. We have found that horse logging plays an integral role in achieving these management goals on our forest and could provide a model for other forested landscapes across Appalachia and beyond.

## Why Horse Logging?

*“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value.”*

- Speech by Theodore Roosevelt in Osawatomie, Kansas, August 31, 1910.



Extraction of logs via horses (and/or mules) has several advantages when compared to using machinery in forests where environmental concerns, long-term management and aesthetics are especially important to the landowner. In the Berea College Forest, we are just as concerned about the quality of the trees left after the harvest as the ones harvested. By using horses for logging, we are better able to control and limit damage to the remaining canopy trees, the understory and the soils. Animal extraction, because of power limitations, necessitates removal of individual logs rather than whole-tree lengths. Thus, the removal of shorter logs allows for increased maneuverability around standing trees and is less likely to skin up and damage the residual stand left to grow. Spot compaction of hooves is less damaging to the forest soil and tree roots than the wheels and tracks of machinery, resulting in only surface-level skid trails.

Loggers utilizing draft animals as the primary means of timber extraction work in a boots-to-the-ground capacity. They see and experience the area they are managing with great intimacy. This management style allows the logger to have a greater understanding of the ecosystem they are managing. As they walk in and out of the forest extracting timber, they gain a greater understanding of their management area. This allows them to take extra precautions to avoid damaging specialized ecosystems and to make management decisions that can enhance the ecosystem as a whole.

The conscious horse logger will create a situation that leaves the forest healthier than they found it. What the forest manager is leaving behind is more important than the resource being extracted. The nuances of the environment the practitioner is working in is more apparent behind a team of animals than in the cab of a machine.



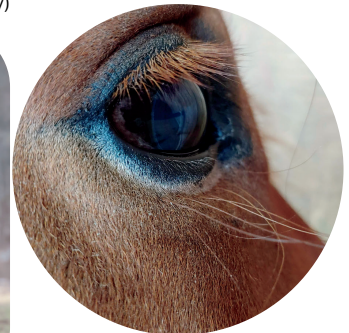


## The Suffolk Horse Breed

Berea College owns several Suffolk draft horses that are utilized in our operation. The Suffolk is sometimes called a Suffolk Punch--the word "punch" meaning stocky. These horses are always chestnut (reddish) in color. While other large horse breeds derived from medieval war horses, the Suffolk is the only breed developed and selected exclusively for farming. It was bred in Norfolk and Suffolk counties, England, to plow the heavy clay soil found there where a horse with power, stamina, health, longevity, and docility was needed. Of all the draft breeds, the Suffolk is the oldest, and has remained relatively unchanged. Characteristically the appearance of the Suffolk is a pleasant, roundly modeled whole that pertains, like the singleness of color, to no other breed. The average height of a Suffolk horse is 16.1 hands, but many stallions may stand up to 17 hands and more.

(<https://suffolkpunch.com>)

Suffolk horses were first imported to Canada in 1865 and to the United States in 1880. The Suffolk had strongholds in the Midwest, New England, and Ontario, but was never as popular as the Percheron, Belgian, or Clydesdale. The breed declined in numbers after World War II and came close to global extinction in the 1950s. It was only through the efforts of a few breeders that the Suffolk survived and, while still rare, its numbers are increasing. Today there are about 600 Suffolks in the U.S. and around 200 in England. Their moderate size compared to other draft breeds has been an asset in its promotion to those who continue to farm with horses. (Livestock Conservancy)





Lucy and Theo as yearlings

Berea College chose to own Suffolks for our horse logging program because their low center of gravity, compact yet powerful build, and docile temperament make it an ideal horse for logging as well as farming. Additionally, due to the rarity of the breed, we are proud to play a role in helping to insure the survival of this breed by showcasing and breeding these wonderful horses. As our program grows and our number of working Suffolks grows, we hope to help bring back both the breed and the practice of horse logging to Appalachia and beyond.

Suffolks aren't the only animals that can be successfully utilized for logging. Mules were the draft animal of choice for most of Southern Appalachia. Suffolk, England, is a colder climate than Kentucky, and so Suffolks are not well adapted to endure the hot summers of the Southern United States. Mules, however, are quite well adapted to a hot climate and are typically less expensive than draft horses. While Berea College does not currently own any mules, our logging staff do own mules and they sometimes use them, along with the Suffolks, for logging on the forest.



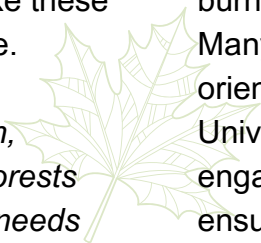
## Benefits to the Forest

*“When we see land as a community to which we belong, we may begin to use it with love and respect.”*

- Aldo Leopold, A Sand County Almanac

The selection of which trees to cut and when is of paramount importance to the success of any harvest operation, no matter how well horse logging is performed. Berea College’s professional foresters make these decisions based on sound silviculture. *Silviculture is the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society such as wildlife habitat, timber, water resources, restoration, and recreation on a sustainable basis* (US Forest Service definition). Some important forest ecosystem restoration projects the Berea College Foresters use silviculture to implement are

centered on enhancing oak regeneration across the forest, restoring shortleaf pine as a forest component, helping promote American chestnut survival, prescribed burning, and control of invasive species. Many of these endeavors are research-oriented with the University of Kentucky, University of Louisville, and others engaged in ongoing research that helps to ensure our management practices stay at the leading edge of the profession. Horse logging is a tool that can be used to achieve these objectives while preserving the long-term integrity of the water quality, ecosystems, aesthetics, recreation, and education/cultural benefits provided by this diverse forest.







Berea operated its own sawmill from 1960-1970



Equipment for horse logging is relatively low cost

Berea College's 9,000-acre forest is large enough to attract large logging companies, but our commitment to Appalachia behooves us to strive to provide a model that could also benefit small landowners. Consolidation and centralization of the timber industry, coupled with fragmentation of the forest resource (smaller tract size) in most of the USA, has created a situation in which small private landowners can have difficulty obtaining competitive value from timber harvests from their land unless they liquidate all the merchantable trees at once. Logging small tracts of timber with large, expensive equipment, often isn't profitable unless the tract is high-graded (all the valuable trees harvested) or clear-cut. Loggers and sawmills, (and farmers), have had to "get big, or get out" to survive these market realities. The relative low cost of a horse logging operation, compared to a mechanized logging operation, makes harvesting smaller forest tracts more feasible. Horse logging, being much less capital-intensive, could be a successful model for small logging operators to make a living while providing a viable option for these small forest tracts to be economically harvested in such a way as to provide continuous income that leaves valuable growing stock, wildlife habitat, and aesthetics intact.

## Benefits to Students

*“The mountains are calling and I must go, and I will work on while I can, studying incessantly.”*  
– John Muir



Abbie Phelps ('21) and Willow

Horse logging is hard work. It requires considerable physical exertion and is inherently dangerous. In addition to requiring the usual logging skills of chainsaw operation, directional felling, tree species identification, timber grading skills and “woods smarts”, it also requires cultural skills and animal husbandry knowledge that some would say is a “dying art”. The horses themselves, also, must be physically fit and highly trained to successfully and safely perform their work. The relationship between animals and people working in the forest together, however, is priceless. The connection that develops between the teamster and their working team of powerful, living, breathing, thinking horses, while surrounded by nature, helps solidify an appreciation for all living things and the dynamic environment we all ultimately depend on for our survival. The situational and ecological awareness that is gained through the process of learning these diverse set of skills is a transformative experience for many. The skills and knowledge employed are highly useful for success in various professions students might pursue in the areas of forestry, wildlife management, biology, veterinary science, or running their own business.

This is a profession with growth potential, as few practitioners exist, yet demand is high. Privately owned forests are becoming fragmented into smaller tract sizes. This, along with continued consolidation of the conventional logging industry, seems to portend that small-scale horse loggers, if willing to do this physically demanding work, should see plenty of demand for their service, especially in the highly forested Appalachian region where many of our students are from. Through Berea's horse logging labor program, students learn the skills necessary to pursue horse logging as a career.



Senna Jenkins ('25)  
and Theo



Zen Dean ('23), Willow and Halley



Reuben Hicks ('25) and Lena



Anthony Nolen ('23), Holly, and Willow



## Benefits to the Public

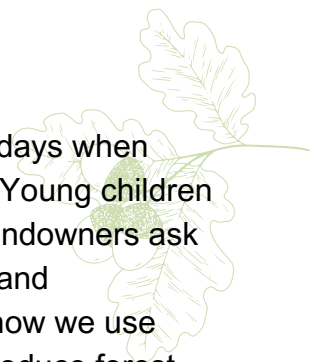
*“The care of the Earth is our most ancient and most worthy, and after all our most pleasing responsibility. To cherish what remains of it and to foster its renewal is our only hope.”*

– Wendell Berry

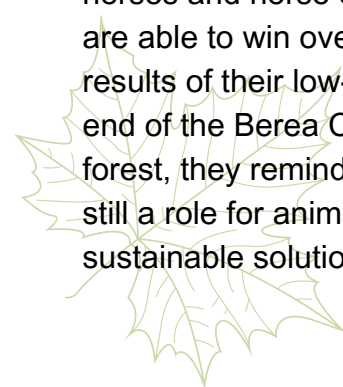
Berea College and its first Forester, Silas Mason, played a prominent but little-known role in America’s conservation movement lead by the likes of Theodore Roosevelt, Gifford Pinchot, John Muir, Carl Schenck and other better-known individuals. In 1895, Mason was offered the position of Assistant Chief to the USDA Division of Forestry (now Forest Service) by Dr. Bernhard Fernow. Carl Schenck, while forester at the Biltmore Estate (now known as the “Cradle of Forestry”) also attempted to hire Mason. Instead, he pursued his own forestry effort at Berea College, teaching three forestry classes here the same year Schenck started his forestry school at Biltmore. Mason purchased the first tract of the Berea College Forest, using his own funds in 1898 and published early research on Old Field Forest Growth in 1899 (Central States Forest Experiment Station Archives). Ms. Sarah Fay, of Boston, an early supporter of the Appalachian Mountain Club, became his benefactor, providing funds for land acquisition and Mason's salary. By 1918, the Fay endowment had provided for the acquisition of 5,400 acres. Berea College is well positioned to continue to make a positive impact in forest management and natural resource conservation. Together with the College’s history as the first integrated college in the South, its status as one of a handful of work colleges in the United States, and its ownership of some of most scenic forestland and hiking trails just four miles from heavily traveled Interstate 75, a unique combination of purpose and capacity is evident.



Since the addition of the Tirbracken Green Forestry Outreach Center, in 2016, we now have a “welcome center to the forest” equipped with conference space, an interpretive hall, and many outreach programs available to the public. The Center welcomes thousands of visitors and learners a year. *“People don’t care how much you know until they know how much you care.”* This quote has been attributed to Theodore Roosevelt and several others. Whoever deserves the credit for it, the idea does seem to apply to forestry. Foresters often try to interest the public to attend and hear about the merits of sustainable forestry by holding workshops, seminars, presenting papers and posters, and giving talks. Rarely, however, are these events very well attended. We have our data, or facts, our brochures, our talking points to present, but they do not draw a crowd like our team of Suffolks do. Our horse logging demonstrations we have held have been some of the most well attended and well received events at the Forestry Outreach Center.

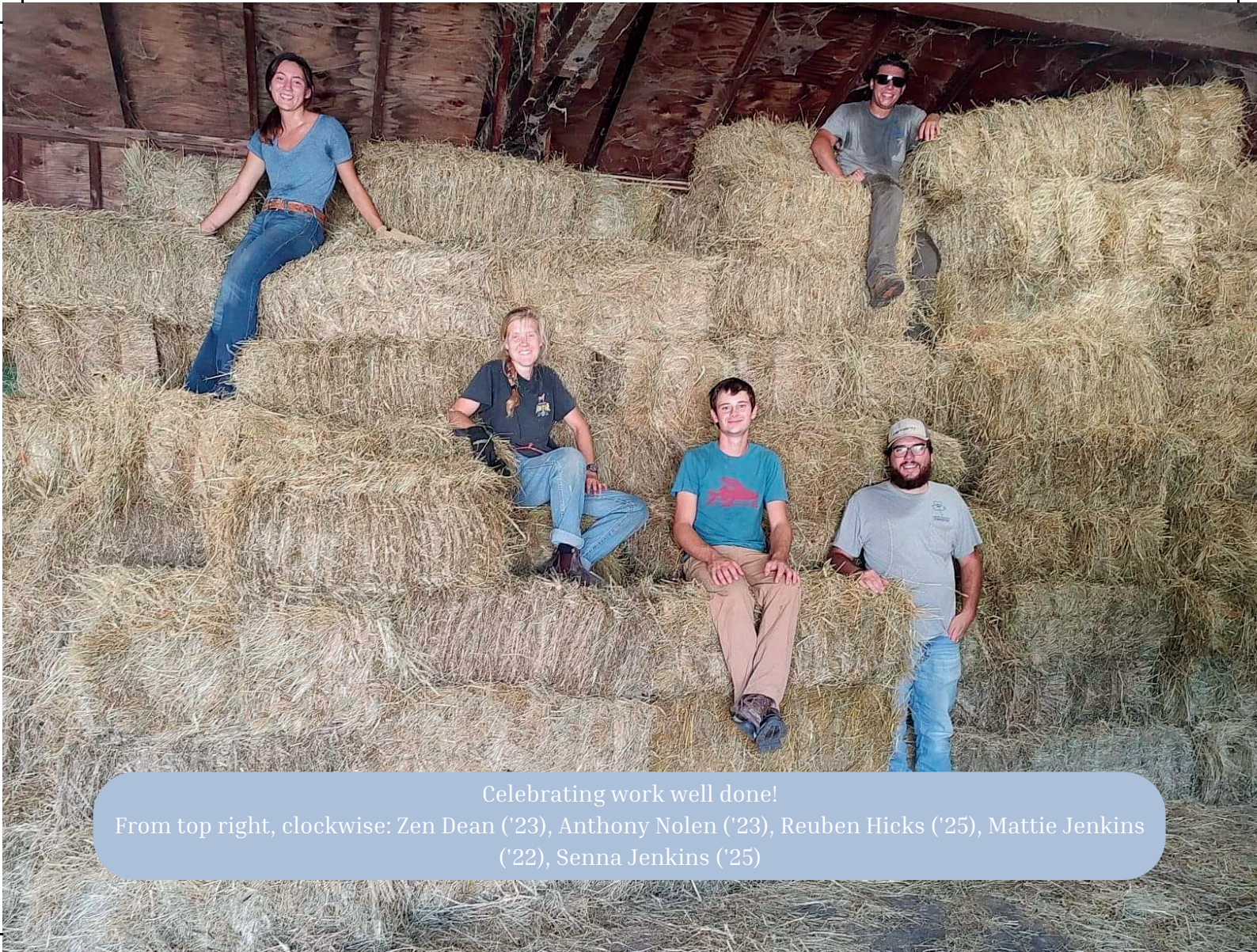


“Old timers”, upon meeting our gentle giant Suffolks, often reminisce about the days when they, their parents, or grandparents farmed and logged with horses and mules. Young children marvel at these beautiful animals and express enthusiasm in their presence. Landowners ask where they can find someone to log their forest with horses. People of all ages and backgrounds are drawn to the horses and want to know more about them and how we use them to manage our forest. This sets the stage for education. It allows us to introduce forest management concepts, strategies, and ideas that might otherwise seem boring or irrelevant. Folks see the enthusiasm of our students who are involved in the work and appreciate the skills and knowledge they have acquired working in the horse program. The horse logging program has helped build bridges between the College and the community, providing educational opportunities, local ecosystem restoration, and cultural preservation.



Kentucky is known for its race horses. The “unbridled spirit” of Kentucky is attributed to its horses and horse culture. Our red, stocky Suffolk draft horses may never win a race, but they are able to win over the hearts of folks who meet them at a demonstration event, admire the results of their low-impact logging on the forest, or see them grazing in the fields on the west end of the Berea College Forest by their red barn on the hill. As a sort of ambassadors of the forest, they remind us that even as our society is increasingly reliant on technology, there is still a role for animal power, for appropriate use of technology, and the use of small-scale, sustainable solutions to the environmental issues we face.





Celebrating work well done!

From top right, clockwise: Zen Dean ('23), Anthony Nolen ('23), Reuben Hicks ('25), Mattie Jenkins ('22), Senna Jenkins ('25)





To learn more about the Berea College Forestry program, please visit:

- <https://next.berea.edu/department-of-forestry>
- [forestryoutreach.berea.edu](https://forestryoutreach.berea.edu)